NATUR CYMRU

The Nature of Wales

Number/Rhif 26 • Spring/Gwanwyn 2008

- Bluetail drops in
- Dune butterflies falter
- Y cythraul coeden rosod
- Saving and creating meadows
- Volunteers save butterflies
- Records centres come together
- Books, News, Comment...

NATUR CYMRU
The Nature of Wales

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Natur Cymru is intended to promote the exchange of information about biodiversity and encourage debate. If you have information, ideas for articles or artwork which you think might be of interest to readers, please contact the Editor.

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NATUR CYMRU GOLYGYDDOL

Yn ôl adroddiad newydd, mae bywyd gwyllt yn werth bron i £2 biliwn i economi Cymru. Ymatebodd un o'r sefydliadau cadwraethol a oedd wrth wraidd yr adroddiad trwy gyfeirio at ddatblygu'r farchnad. "Rhaid i ni wneud yn siŵr fod pobl yn siopa'n lleol er mwyn prynu'r offer ar gyfer gweithgareddau natur," meddai un llefarydd.

Wel, ie, efallai. Ond onid ydym ni'n methu'r ergyd? Beth am wneud yn siŵr fod Cymru yn parhau i fod yn lle gwych i weld bywyd gwyllt yn gyntaf, gan ganolbwyntio wedyn yn unig ar 'ddatblygu'r farchnad' trwy ddathlu'r ffaith honno?

Mae hanes dolydd blodeuog traddodiadol, a oedd gynt yn nodwedd gyffredin iawn ar ffermydd da byw, yn enghraifft dda. Erbyn hyn, mae'r cynefin hynod hardd hwn yn brin dros ben, a phur anaml y mae i'w weld – pa un ai a ydych yn dwristiaid, ai peidio. Wrth gwrs, mae hyn yn arwain at golledion economaidd, mae pobl yn colli'r mwynhad o weld y dolydd, ac mae'r anifeiliaid yn colli'r gwair.

Mae adroddiad Chris Fuller ar gyflwr dolydd blodau gwyllt yn ddigon i'ch sobri. Hefyd, mae'n ein hatgoffa bod ein dyled yn fawr i'r arloeswyr hynny sy'n gwarchod ein dolydd. O gofio am yr holl diroedd glas llawn blodau sydd wedi diflannu, rŵan yw'r adeg i wneud yn iawn am y colledion ac adfer ein dolydd.

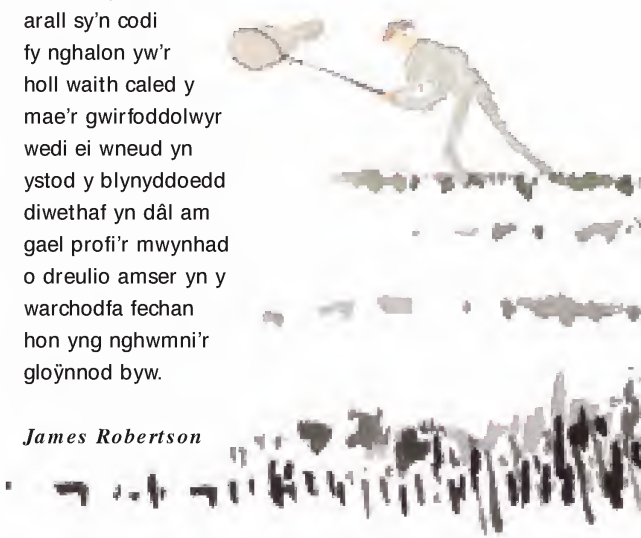
Dyma'n union sydd wedi bod yn digwydd ar fferm Gilfach yn y blynyddoedd diwethaf. Ar ôl monitro'r sefyllfa yn ofalus, mae'r canlyniadau'n awgrymu y gall dolydd - efo rhywfaint o help llaw – ddod yn nodwedd gyffredin unwaith eto ar ffermydd. Mae natur yn ddygn iawn, ac fe all bywyd gwyllt ein synnu trwy fanteisio i'r eithaf ar bob cyfle pan fo'r amodau'n iawn. Mae ymrwymiad ac adnoddau'n hollbwysig yn hyn o beth, yn ogystal â mynd ati i ymdrin â materion ymarferol sy'n ymwneud â ffermio.

Fis Mai, fe ddylai'r dasg o warchod dolydd gael hwb yn sgil cyhoeddi'r Maniffesto Dolydd. Fe fydd hwn yn gosod yr agenda, ac wedyn fe all pawb sy'n ymhél â'r maes uno i'w gefnogi. Bydd ei lwyddiant yn dibynnu ar gydweithio – o du Llywodraeth Cynulliad Cymru, undebau'r ffermwyr, sefydliadau cadwraethol a pherchnogion dolydd.

Pan af ati i feddwl am ddolydd yng nghanol yr haf, alla' i ddim peidio â meddwl am loÿnnod byw. Yn y rhifyn hwn, ceir dwy erthygl sy'n adrodd hanesion gwahanol iawn am hynt a helynt y creaduriaid hyn. Stori drist yw un o'r rhain yn sôn am ddau löyn byw prin sy'n dirywio ar Warchodfa Natur Genedlaethol. A fydd y dirywiad hwn yn arwain at dranc y rhywogaeth? Mae'r cyfan yn dibynnu ar y bobl hynny sy'n gyfrifol am reoli'r safle. Pe bai difodiant yn dod i'w rhan, fe fyddai'r gymuned – a hyd yn oed yr economi - yn siŵr o ddioddef.

Mewn gwrthgyferbyniad â hyn, mae un o warchodfeydd yr Ymddiriedolaeth Natur, nid nepell o Gaerdydd, wedi llwyddo i gadw'r prysgwydd a'r coed ynn dan reolaeth trwy ymroddiad ei gwirfoddolwyr, gan gynyddu niferoedd ac amrywiaeth y gloÿnnod byw a geir yno – rhywbeth sy'n gwbl groes i'r patrwm yng ngweddill y wlad. Rhywbeth arall sy'n codi fy nghalon yw'r holl waith caled y mae'r gwirfoddolwyr wedi ei wneud yn ystod y blynyddoedd diwethaf yn dâl am gael profi'r mwynhad o dreulio amser yn y warchodfa fechan hon yng nghwmni'r gloÿnnod byw.

James Robertson



NATUR CYMRU EDITORIAL

Wildlife is worth almost £2 billion to the Welsh economy, according to a new report. The response from one of the conservation organisations behind the report was all in terms of developing the market. "We need to make sure that people shop locally to buy the equipment for wildlife activities," a spokesman was quoted as saying.

Well, yes, perhaps, but isn't this missing the point? How about making sure that Wales stays a fabulous place to experience wildlife, and then 'developing the market' by celebrating that fact?

The story of traditional, flower-rich meadows, once such a common feature of livestock farms, is a case in point. This wonderfully attractive habitat is now so rare that it is beyond the experience of most of us, whether or not we are tourists. This must translate into a degree of economic loss, along with the loss of so much pleasure for people, and of herb-rich hay for healthy stock and so on.

Chris Fuller's account of the state of wildflower meadows is sobering. It is also a reminder that, along with the legacy of beautiful meadows which remain, we should be thankful to the pioneers of meadow conservation. Given the huge loss of grasslands full of wild flowers, now is the right time to begin making amends and bringing meadows back.

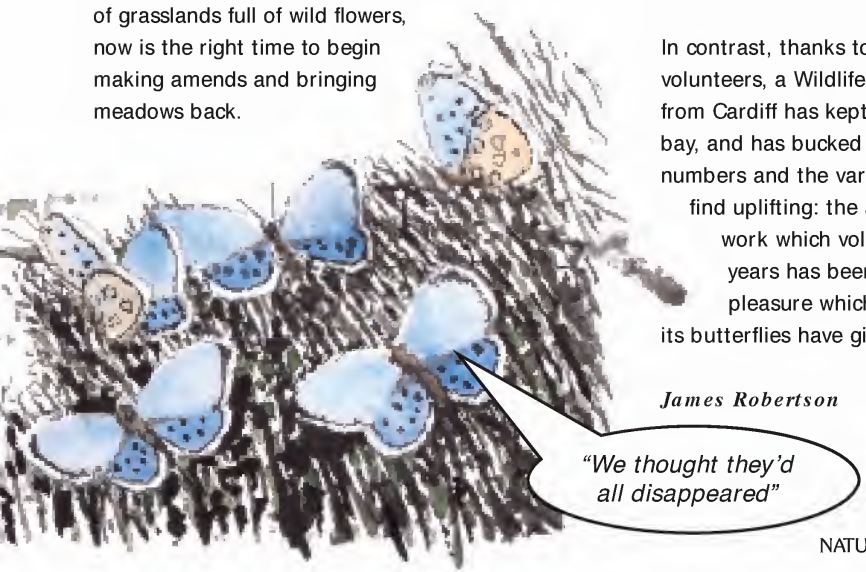
This is exactly what has been happening on an upland farm, Gilfach, in recent years. The evidence from careful monitoring suggests that, with a little help, meadows could become a common feature of farms once more. Nature is robust, and wildlife can surprise us by seizing opportunities when the conditions are right. It is a matter of commitment and resources – and of addressing the practical issues for farming.

Meadow conservation should receive a welcome boost in May with the publication of a Meadows Manifesto. This will set an agenda which everyone concerned can unite behind. Its success will depend on all of us working together, from the Welsh Assembly Government, through farming unions and conservation organisations to individual meadow owners.

When I think of meadows in high summer, I think of butterflies. Two articles in this issue give very different accounts of the fortunes of butterflies. One is a sad story of the decline of two rare butterflies on a National Nature Reserve. Whether this continues to extinction will depend on those responsible for the management of the site. If this happens, the whole community, and even the economy, will have been let down.

In contrast, thanks to the dedication of its volunteers, a Wildlife Trust reserve a short distance from Cardiff has kept scrub and incipient ashwood at bay, and has bucked the national trend in butterfly numbers and the variety of species. Something else I find uplifting: the astonishing amount of hard work which volunteers have put in over the years has been given freely in return for the pleasure which this small clifftop reserve and its butterflies have given.

James Robertson

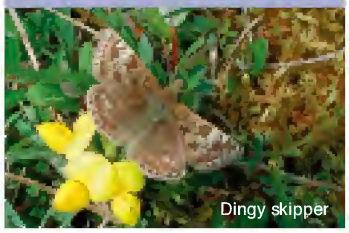


Goodbye dune butterflies?

Helen Bantock

Marsh fritillary

HELEN BANTOCK charts the worrying decline of the marsh fritillary and dingy skipper butterflies on Morfa Harlech National Nature Reserve, and the management failures which account for this sad story.



Helen Bantock

Dingy skipper

The sand dune system at Morfa Harlech National Nature Reserve (NNR) is one of the most actively growing in Europe and the slacks behind the dunes are of great ecological value. However, changes in agricultural practice threaten to lead to the loss of several butterfly species.

The sweep of Cardigan Bay, with views to the Llŷn and towards the Snowdon range, is one of the most spectacular in north Wales. The sand dunes here have evolved as a result of glacial activity and are dependent on sediment transport via longshore drift. Morfa Harlech NNR is an area of about 366 hectares and includes the saltmarshes along the estuary of the Afon Dwyryd. The dune system supports a great diversity of wildlife with pioneer species such as sea rocket *Cakile maritima* through to species found in dune slacks, dune heath and dune scrub. In 2004 it was recognised as a Special Area of Conservation (SAC), having been a Site of Special Scientific Interest (SSSI) for many years.

In the past, awareness of the ecological value of the whole of Morfa

Harlech, which includes all the low-lying ground up to the hillside, was much less than it is today. In the 1950s a coniferous plantation was established (Harlech Forest), which is on the edge of what is now the NNR. With the onset of more intensive farming, many fields in the wider area have been drained and fertilised. Before the late 1990s, when there were only a few cattle present on the reserve, the marsh fritillary *Eurodryas aurinia* and dingy skipper *Erynnis tages* were more abundant. Now, however, there is just a single colony of dingy skippers on the edge of Harlech Forest, which appears to be the only one left in Merionethshire. The local population of the marsh fritillary has recently become very precarious. Its deterioration has coincided with major changes in the grazing regime over the last ten years.

Tristan Hatton-Ellis

Devil's bit scabious, essential food for the marsh fritillary

Marsh fritillary

The marsh fritillary is a sedentary butterfly, typically not ranging more than a kilometre. If there are suitable patches of habitat nearby, there is a chance that new sites may be colonised in a good year. In 2003, when I first became interested in the marsh fritillary, there were five known colonies in and around Harlech[1].

Now, only two sites remain. In 2002, a large marsh fritillary colony was reported from the far north end of the NNR covering just over four hectares. Owing to the remoteness of the site, it is likely that there has been a population here for many years, as there is a 1980 record. It is one of very few UK marsh fritillary populations on sand dunes, and most colonies in Wales occur on damp grassland, in association with purple moor grass *Molinia caerulea*. The other remaining colony is on a 40 hectare farm in lower Harlech, which has not had sheep grazing and where there is a substantial amount of suitable vegetation.

This butterfly needs abundant patches of the larval foodplant, devil's bit scabious *Succisa pratensis*, with a tussocky structure between 12 and 25cm high to provide shelter for the larvae. In several areas in Wales where there is suitable habitat, low intensity grazing by cattle is now used to maintain marsh fritillary habitat in optimal condition, and financial agreements with local graziers are in place to compensate them for the reduction in cattle numbers.

Grazing regimes need to be carefully monitored if the required sward height is to be maintained. On grassland areas, one cow per hectare during the maximum growing period between March/April and June/July is usually used as a starting point. Sheep are unsuitable, as they graze the sward very tightly and eat all the scabious. If cattle are left out all year the stocking rate is usually 0.25 animals/hectare. On dune grassland, as occurs on Morfa Harlech, even fewer cattle are needed, as the vegetation is less nourishing than on inland areas.

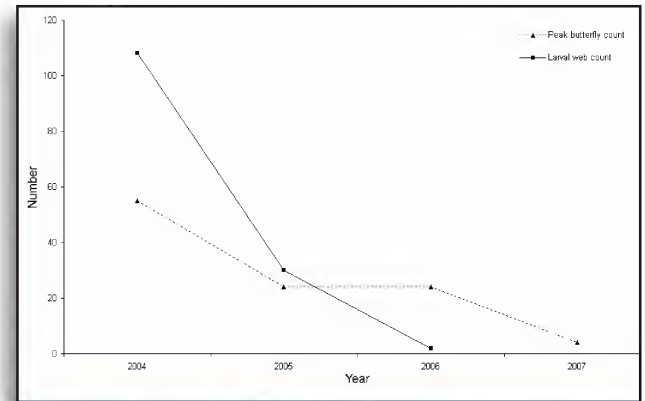
Murlough NNR in County Down is a sand dune site of similar size to Morfa Harlech which also has marsh fritillaries. It is not an identical habitat as the butterflies are found in grassland just behind the dunes. The

area is divided into four compartments and they have 11 Exmoor ponies grazing all year and about 50-60 cattle from September to April. Their average stocking rate works out at about 0.2-0.3 livestock units/hectare per year, the vegetation height is assessed by eye every month and the grazing animals adjusted accordingly. The larval web counts have gone from 40 in 2004 to over 800 this last season! The stocking rate on Morfa Harlech greatly exceeds this and in addition the sheep are on it in winter, which is disastrous.

Since 2002, there has been regular monitoring of the marsh fritillary on the Harlech NNR site. Diminishing numbers of butterflies have been seen each year. At the end of May 2003, it was estimated that at least 1000 butterflies were on the wing. In 2006 the highest number seen was 24 and in 2007 it was less than half this number.

Habitat degredation

Marsh fritillary populations do fluctuate, but the precipitate downward trend at Harlech has coincided with the increasing degradation of the habitat. For the past ten years there has been a steady increase in the number of animals grazing the area, including the marsh fritillary site. The increased number of cattle, well beyond the recommended stocking levels, with the addition of sheep in winter, has produced a very short sward lacking a tussocky structure. The cattle have been given supplementary feed in the winter, which is a clear sign that the morfa is overstocked. The remnants of the feed have been left lying and will have fertilised the land, which will have been especially deleterious on the saltmarsh area. In September 2004, half of the key area was mown during the larval web count period and at least half of the estimated 108 larval webs were destroyed (the final total was never ascertained because of the mowing).



The decline of the marsh fritillary

Helen Bantock

Morfa Harlech - good marsh fritillary habitat in 2003 (inset) and after autumn mowing in 2004

Shane Farrell

Dingy skipper

Protection

The marsh fritillary is endangered and vulnerable across most of its European range, and because of the importance of the UK population it is a UK BAP Priority Species. It is legally fully protected in Great Britain and Northern Ireland under the Berne Convention (Annexe II) and EC habitats and Species Directive. SAC designation requires Member States to establish conservation measures which correspond to the ecological requirements of designated habitats and the species present.

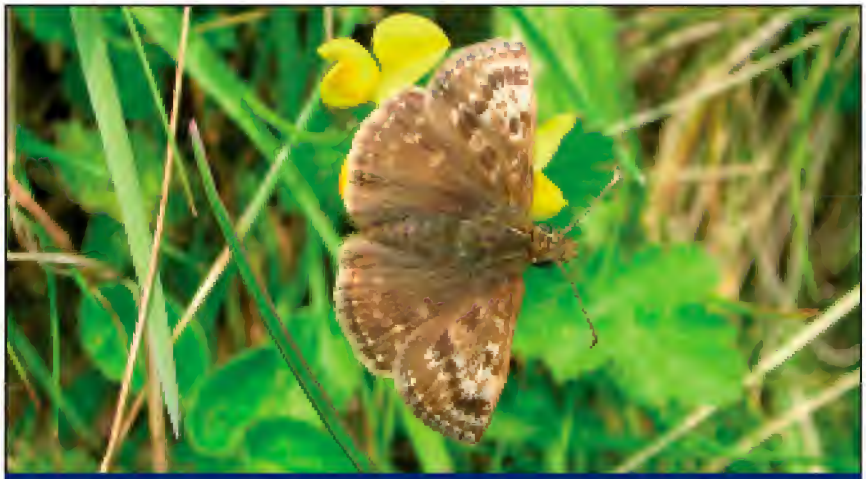
The Countryside and Rights of Way Act 2000 (CRoW Act), gives the Countryside Council for Wales (CCW), which leases and manages the Harlech NNR, the power to issue consent notices and management notices in relation to land which is part of, or would affect an SSSI. CCW had a management agreement for the grazing on the NNR with the local farmer whose animals are on the farmland adjacent to it. However, in spite of this the number of cattle increased and attempts to implement the agreed management plan for the area failed. As a desperate attempt to allow the vegetation to recover from the effects of overgrazing, in the spring of 2007, an electric fence was placed around part of the overgrazed NNR area. Unfortunately, it had been mistakenly taken down by the autumn and the whole area became overgrazed again. There is a real possibility that no marsh fritillaries will fly in the Harlech dunes in 2008.

Dingy skipper

During the past 25 years, the dingy skipper has declined by 49% in Wales and it is now a Priority Species on the UK Biodiversity Action Plan. It thrives in sparsely vegetated areas where the sun warms bare ground and where there are sufficient patches of well-grown bird's foot trefoil *Lotus corniculatus* to provide food and shelter for the larvae. Grazing needs to be light, as the adult female selects tall plants for egg-laying. Like the marsh fritillary, the adults do not travel far from their breeding colonies.

Before conifers were planted there was a considerable amount of acid heathland, remnants of which remain. After the felling of mature trees, replanting has taken place and more recently this has included some deciduous trees. Wherever light has been able to penetrate the canopy, and especially in dry sandy areas, the vegetation has been suitable in the past for butterflies such as dingy skipper and grayling.

Shane Farrell



Dingy skipper

Forestry Commission Wales (FCW) funded Butterfly Conservation to carry out a survey of lepidoptera in the forest, and a joint report was published in 2004 which included management plans to improve the available dingy skipper habitat[2]. As no conservation work had been carried out for some time there were high hopes that the area would be improved. By the time the management plans were actioned in 2007, most of the paths had become totally overgrown and there were no areas of optimal habitat left within the forest. The recommendations of the report included no more than 25% cutting of verges each year and emphasised the importance of removing all the birch scrub from what used to be very favourable habitat in a large open glade. However, it was not possible to tackle the birches in the spring of 2007 because of flooding and, as the paths were very overgrown, the verges were all cut back.

Following this, the area along a track at the edge of the forest is looking more suitable, with tall bird's foot trefoil and bare sandy areas - but no butterflies were seen to use it in 2007. The largest numbers, as in the three previous years, were counted along a sandy strip belonging to FCW, which is just in front of the forest fence. Although this area is grazed by both cattle and sheep, it contains a substantial amount of tall bird's foot trefoil and shelter is provided also by gorse and some dead, felled sallows. Cattle numbers have increased here only fairly recently, and although the felled trees and gorse hinder their ingress, allowing the bird's foot trefoil to thrive, if the number of animals is not reduced the area is likely to become unsuitable.

Future management will control the growth of willows at the edge of a concrete path, where dingy skippers were seen in 2007. It will create a large open area within the plantation, which should encourage growth of bird's foot trefoil and grasses and nectar sources for other lepidoptera. The situation is very encouraging, as dingy skippers were seen in four areas in and around the forest in 2007. With further conservation work to be completed in the autumn/winter of 2007, there should be several areas of good habitat available this spring.

Unfortunately, it is not possible to restore some of the area to heathland by removing conifers, although this would be the ideal management. There will be a continuing need for monitoring of the butterfly population and targeted removal of trees and vegetation, as it is not practicable to have animals grazing within the forest area.

Future survival

Recent research[3] suggests that within a 16km^2 landscape, such as that of Morfa Harlech, at least 50 hectares of suitable habitat for the marsh fritillary are needed to ensure long-term viability. The NNR colony was an excellent reservoir of the species, and butterflies from there were able to disperse to the many small patches of *Succisa* which still occur at the edge of the forest and around the golf course, as well as further inland. Given that a large area of the lower Harlech farm, which is 40 hectares in total, has suitable vegetation, the marsh fritillary's future would have been much more assured if the NNR had been

maintained in better condition.

Neither the marsh fritillary nor the dingy skipper will be able to survive on Morfa Harlech without a change in management. It is extremely disappointing that, in spite of financial inducements, the marsh fritillary has not been protected and the NNR site has become so degraded. If the marsh fritillary population is lost from the NNR, the only remaining colony will be at the farm in lower Harlech. Although the area on the farm now under management for the butterfly is around 40 hectares, only one field is currently used by the marsh fritillary. It was a very poor year for most lepidoptera in 2007 and the lower Harlech farm had low numbers of adults flying and very few autumn larval webs, although there had been good numbers of basking larvae in the spring. Even given positive management, this small and isolated population may well lose genetic diversity, leading to local extinction.

This would leave reintroduction as the only way of retaining the marsh fritillary in the area. This is currently being tried in Cumbria[4], where the reproductive efficiency of the population declined as the few butterflies that remained became isolated. It has been a very time consuming, costly and difficult exercise with no guarantee of success.

The dingy skipper population would recover on the NNR if the intensive farming ceased. It will always be difficult to manage for a grassland species of butterfly in a conifer plantation and this should be seen as complementary rather than being the main way of managing for the species.

Given the enormous impact of recent intensive farming practices on both the marsh fritillary and dingy skipper, other important flora and fauna will surely have been adversely affected. This ecologically rich area has been severely damaged and at a substantial cost to the public in the form of farming subsidies.

Helen Bantock has a particular interest in moths and butterflies in the Harlech area, especially the marsh fritillary and dingy skipper.

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Ffarwel, gyfeillion yr haf?

A fydd brith y gors yn hedfan ar dwyni Morfa Harlech eleni? Go brin. Dwy boblogaeth sy'n weddill yn ardal Harlech ac roedd yr un ar y Warchodfa Natur Genedlaethol yn cynnwys llai na 12 oedolyn yn 2007. Dirywiad cynefin sy'n gyfrifol; ar waethaf cytundeb rheolaeth rhwng y Cyngor Cefn Gwlad a'r ffermwr mae gorbori, bwydo stoc a thorri llystyfiant yn dal i ddigwydd. Rhaid cael o leiaf 50 ha o gynefin addas ar draws y Forfa i gynnal brith y gors. Gydag un o'r ddwy boblogaeth yn defnyddio ond un cae bach ar fferm 40 hectar, byddai dyfodol y rhywogaeth yn ardal Harlech yn llawer saffach pe bai'r Warchodfa mewn gwell cyflwr.

Tir moel, llystyfiant tila a choesynnau planhigion tal sydd angen ar y gwibiwr llwyd. Roedd y gweundir lle plannwyd y conwydd nôl yn 1950 yn gynefin delfrydol. Er bod gorbori a gordyfiant yn peryglu'r glöyn hwn, nid yw'r darlun yn hollol ddu. Cofnodwyd y gwibiwr llwyd mewn pedair ardal o gwmpas y fforest yn 2007 a bydd gwaith y gaeaf hwn yn creu sawl llecyn addas iddo. Er cystal fyddai troi'r blanhigfa yn weundir unwaith eto, nid yw hyn yn debygol o ddigwydd ac mae'n bwysig, beth bynnag, i weithredu er lles y gwibiwr drwy'r ardal gyfan, ac nid o fewn y blanhigfa'n unig.

Rhaid newid rheolaeth i sicrhau dyfodol y gloÿnnod hyn ar Forfa Harlech. Mae'n siom na all cymhellion ariannol na dynodiad eu diogelu. Mae eu tranc yn adlewyrchu dirywiad cyffredinol mewn ardal o ddiddordeb ecolegol mawr - dirywiad a gostiodd yn ddrud i fywyd gwyllt ac i'r cyhoedd hefyd.

Wales' first red-flanked bluetail

Whilst on Ynys Enlli last October, ***BEN STAMMERS*** *came across a very rare visitor from the east. Here he considers why this member of the chat family might have ended up so far from home.*

All images: Dan Brown — Red-flanked bluetail

To those who have, at certain times in their lives, found themselves skimming through the rump end of birdwatching magazines, the narrative formula will be recognisable. Insert the date, weather, location, police identification-style description of the subject, and report on a tantalising glimpse of as-yet-unidentified species plus initial thoughts on its identification. It is normal here to write 'my pulse quickened', before giving the crucial identification features and your previous experience of the species which confirm that it really is the rarity, and not its common cousin.

Et voila! According to the above, my account of spotting a new Welsh species could be filled in thus:

"1/10/07… still, cloudy… Tŷ Nesaf Garden, Ynys Enlli… reddish flank… chat-like… blue tail, white eye-ring… jizz…**Red-flanked Bluetail** (*Tarsiger cyanurus*)… Fair Isle 1993… wardens, walkie-talkies… photographed… phone-calls… boat chartered… capture, ringing…Never thought I'd see one of those again!"

Perhaps it's more interesting, however, to ask why certain rare birds turn up in the first place, and how their appearance relates to the business of migration. Red-flanked bluetails, which are a kind of chat, related to robins and redstarts, breed mostly in Northern Russia (there's a tiny population in Finland), and winter in India. Western Europe is not really on their intended route, so why did one find itself on Ynys Enlli?

In an individual case, of course, no-one can know for sure, but there are general theories. Unlike the occurrence in the UK of some North African or Mediterranean birds, which may have overshot (i.e. gone too far in the right direction), or trans-atlantics, which may have been literally blown off course, the only explanation for long-distance eastern vagrants

would seem to be genuine 'wrong' navigation.

This Enlli bluetail was interesting in this context because it was an adult male. Most eastern vagrants that get seen here in autumn are young birds - their 'mistake' in coming this far west being perhaps more understandable since they've never made the journey before. It's thought that, on their debut, youngsters are responding purely to a pre-programmed directional urge, spurred by changes in day length and a rush of hormones. So if the directional urge of an individual happens to be skewed, it may head in the wrong direction. Some studies have suggested that adults on the other hand, once they've completed one round of migration, are actively trying to return to a particular *place*. Does that mean that this bluetail has never been to India - that he's a serial 'Mark Thatcher', for ever getting lost?

Maybe producing the odd bird with a gene for wrong migration is no bad thing for a species. If by chance one or two errant explorers find suitable habitats for breeding or wintering – and are successful and pass on the gene – you have the beginnings of a potential shift in population behaviour (such as that seen in blackcaps, now wintering in large numbers in the UK). Bird populations are dynamic, responding to local changes in habitat or trends in climate and, because of their amazing mobility, may be able to colonise and exploit new areas relatively quickly. Seen in this light, the Llŷn's Siberian visitor could be a pioneer - its mission: to boldly go where no bluetail has gone before...

Enlli's rare attraction

Despite the statistical unlikelihood of mega-rarities, what spurs on many birdwatchers, creates a hunger in them and draws them to places like Enlli, is the tantalising knowledge that certain geographical and meteorological conditions in certain seasons narrow that unlikelihood ever so slightly. For example, the red-flanked bluetail arrived on the island (along with an *hors d'ouevre* of yellow-browed warblers, another Siberian breeder, and one which is being recorded in Western Europe more frequently) in early autumn, during a period dominated by light winds and high

pressure to the east. There were similar weather conditions when I saw my first bluetail while working on Fair Isle in 1993.

Locally, light easterly winds probably do mean that vagrant birds are more likely to be seen - especially when concentrated along coasts and on islands where they're easier to spot. They would be more likely to stay inland and shelter if there were strong winds from the west. But perhaps it's the wider pattern that is more significant; in this case the settled, still conditions over Russia, allowing long-distance dispersal in the first place. Maybe these birds migrate wrongly in all directions: its documentation in Western Europe may simply reflect greater birdwatching interest and resources in this part of the world.

It's easy to mock the extremes of obsessive twitching, and the kind of celebrity culture that surrounds rarities. And you can argue that the intensity of interest shown in (and carbon burned for) those rarities is out of proportion to any ornithological or ecological significance they might have. But on a human level, rare events are inherently interesting; and maybe encountering a long-distance animal traveller also touches something that's migratory within us. In the memory and the imagination of someone lucky enough to experience it, the appearance of a creature like a bluetail can enliven that whole time of the year when it's seen, bringing a heightened sense of weather, and place. Just as 'Sahara dust' deposited in the wake of southerly winds connects us tangibly to the continent of Africa, this one bird draws a thread between Enlli and the

Ymwelodd fflamgoch Enlli

Rhyfedd oedd gweld cynffonlas asgell goch (perthynas i'r robin a'r tingoch) ar Ynys Enlli fis Hydref diwethaf, ac yntau i fod ar siwrnai rhwng gogledd Rwsia a'r India. Efallai mai'r unig esboniad posib am y fath ddargyfeiriad yw bod 'na wendid ar system lywio'r aderyn hwn, er mai oedolyn ydoedd.

Tybir bod adar, ar ôl tyfu, yn chwilio am le penodol wrth ail-ddilyn llwybrau mudo, tra bo rhai ifanc yn ymateb i ysfa gyffredinol i hel eu pac. Ond peth da, efallai, yw cael ambell aderyn gyda genyn mudo 'anghywir'; rhain sy'n debygol o ddarganfod tiroedd addas newydd ac ysgogi symudiad y boblogaeth gyfan mewn ymateb i newidiadau amgylcheddol.

Mae'r cyfuniad o leoliad a thywydd yn cynyddu'r siawns o weld adar anghyffredin ar Enlli. Cyrhaeddodd y gynffonlas ar adeg pan oedd pwysau uchel a gwyntoedd ysgafn i'r dwyrain o Brydain. Roedd y pwysau uchel dros Rwsia yn allweddol; hwn roddodd gyfle i'r adar fudo yn y lle cyntaf. Efallai bod yr adar yn mudo'n anghywir i bob cyfeiriad ond yn cael eu cofnodi'n amlach yn y gorllewin.

Er mai obsesiynol yw adarwyr ar adegau, rhaid cyfaddef bod digwyddiadau prin yn gyffrous a bod gweld aderyn lliwgar fel y gynffon las yn deffro ymwybyddiaeth o'r berthynas rhwng gwahanol lefydd ar y blaned hon.

vastness of Asia, suggesting the particular spruce or birch patch in a lonely stretch of taiga where it probably fledged, and all the habitats, landscapes and coastlines it has seen in between.

And this was a very bonny, as well as a rare bird. I'm a fan of chats, they all seem to have a positive, perky character and 'the Tarsiger' was a pure chat in that respect: round-headed, pert-billed and bright-eyed, with a flicking tail. And those colours... beautifully pitched opposites of flame-blue and ember-orange crackling against cool olive-brown and cream.

So, all right – my pulse *did* quicken when I spotted him, and he certainly brightened my day. Watching him feeding, redstart-style - nipping down and back up from the fence-line, under the Tŷ Nesaf pines (that perhaps recalled home?) - I found myself quite moved. It was a similar reaction to the one I felt several years ago, when a survey boat I was on came up alongside a huge leatherback turtle, munching on a jellyfish a few miles south of Enlli. It had come so far... Anyway, I hope that, wherever this bird spends the winter, he finds enough food to sustain himself, and gets back to the breeding grounds in the spring. *Bon voyage!*

The frequency of UK sightings has started to increase in recent years, and this probably won't be the last red-flanked bluetail record in Wales - but with birds, as with life, you can get too caught up in expectations or predictions, and end up missing the point. Remember the heartfelt sigh of the late one-time Vicar of Aberdaron:

> "Ah, but a rare bird is
> rare."
> *Sea-watching* - R.S. Thomas

*Born and brought up in north Wales, **Ben Stammers** is a visual artist and naturalist. He gained experience as a seabird warden at sites in Wales, Ireland and the Shetlands, and currently works for North Wales Wildlife Trust as their People & Wildlife Officer.*

Paul Glendell/Natural England

One man and his meadows

Field of green winged orchids

These days we take it as read that grasslands can be of great importance for wildlife, and are a high conservation priority because they are so easily destroyed. It was not always thus, and we owe much to the pioneers of grassland conservation. ***CHRIS FULLER*** *tells the story of flower-rich grasslands, and of one very special pioneer, Derek Wells.*

Never was there a garden like the meadow; there is not an inch of the meadow in early summer without a flower.

So wrote Richard Jeffries (1848-1887) in his book *Field and Hedgerow*, published soon after his death. Alas, if Jeffries were to return today he would barely recognise the British countryside, in which the flower-rich meadow is now a rare feature, thanks to the relentless progress of modern intensive agriculture. Since the 1940s most of our grasslands, particularly in the lowlands, have been ploughed, re-seeded as monocultures and treated with potent fertilisers - a recipe for the production of grass forage in quantity, but the loss of the wild flowers so familiar to Jeffries in his time.

The loss of unimproved herb-rich grasslands in Wales has been as extensive as in much of Britain, and now only scattered fragments remain, be they the distinctive types found on wet, dry, acid, neutral or

Stuart Smith

Dyer's greenweed

alkaline soils. Traditional hay meadows are particularly scarce, with good examples being counted on one hand in most counties. The Welsh upland grasslands, which by nature are poorer in plant species than those in the lowlands, have also been extensively improved where topography allows.

The unimproved grasslands that we are talking about in this article are of importance to nature conservation because they can contain the richest assemblages of wild plants to be found in Britain - they are of scientific interest, they act as gene banks and are a floral spectacle 'that delights the eye', as Jeffries said in another of his books, *The Life of the Fields* (1884). They also provide a habitat for a wealth of invertebrate life and are important nectar sources.

The dramatic loss of biodiversity on farmland was not officially recognised until the publication by the Nature Conservancy Council (NCC) in 1977 of a report entitled *Nature Conservation and Agriculture*, written largely by that modest giant of conservation, Dr Norman Moore, who did such pioneering work at Monk's Wood Experimental Station (recently closed, amongst much controversy). Also working at Monk's Wood since 1966 was another quiet but determined pioneer who, almost alone, had recognised the rapid loss of herb-rich grasslands in the countryside and had been employed to address the interface between nature conservation and agriculture.

Passionate about botanical conservation, Derek Wells was also an agricultural botanist who understood the farming world, could talk to farmers in their own language and was therefore an ideal person to tackle his mission. Derek soon became a national ambassador for unimproved grasslands and was influential, both within and outside NCC, in bringing about a recognition of the plight of these special habitats and the urgent need to conserve them. Twelve years after his retirement, it was with great sadness that the conservation world heard of Derek's death from cancer in June 2002. As a great friend who taught and encouraged me so much, I would like to dedicate this modest article to his memory.

I first met Derek when I worked as a conservation officer for NCC (and its predecessor, the Nature Conservancy) in the West Midlands from 1967 to 1976. Each year he would accompany me on at least a week's tour of discovered grassland sites in the region and would expertly assess their importance for conservation. When NCC moved me to mid Wales in 1976, Derek continued his annual

Liz Fleming-Williams

Globeflower

visits and developed a great love and respect for the Welsh countryside. As a result, many grasslands were designated as Sites of Special Scientific Interest (SSSIs), and some subsequently became nature reserves. Derek was instrumental in setting up the first grassland National Nature Reserve (NNR) in Wales at Rhos Llawr Cwrt in Ceredigion, and several other NNRs in England owe their existence to his patient and determined involvement. He also helped in many battles to save important sites under threat throughout the country. Again in Ceredigion, he provided much useful advice on the first prosecution in Britain resulting from the deliberate destruction of a SSSI. The site, comprising attractive riverside herb-rich pasture, was completely ruined in full view of witnesses, including myself, but the owner escaped conviction on a technicality.

A visit to a site with Derek was always an education and a pleasure. Firstly he would have a friendly chat with the farmer, discussing everything from the weather to the price of lambs. He placed great importance on establishing a good relationship with the site owner, and on demonstrating that he was an ally and not an interfering bureaucrat! He knew that farmers found it difficult to accommodate rigid prescriptions and regulations in their day-to-day work, and had much sympathy for the lines from Vita Sackville West's poem *The Land* - "Tis farmer, not the date, that calls the tune; better dry August hay than wet in June". If only our present day officials possessed such wisdom! After the friendly chat would follow a walk around the field, during which Derek would quickly decide whether or not the site had any conservation merit. If it did not, he would

Stuart Smith

Green winged orchid

explain to the farmer in the most tactful way, but if it did, a detailed examination would follow: he would record plants in quadrats and complete a special recording card designed by him and used nationally. Much was his delight when he found some of his favourite plants, such as green-winged orchid or, particularly in Wales, globeflower, devil's-bit scabious, meadow thistle or dyer's greenweed. To him a good site would contain at least 40 plant species, whilst the outstanding ones would have double that figure. Compare that with the handful of species to be found in modern improved grasslands!

Several sites were usually assessed each day, followed by due contemplation over a substantial dinner in the evening – good food being one of Derek's great pleasures in life! Similar visits were made all over Britain, equipping Derek with the detailed and expert knowledge necessary to

Liz Fleming-Williams

Skipper butterfly on meadow thistle

contribute to NCC's *A Nature Conservation Review*, published in 1977, and the book *Grassland Ecology and Wildlife Management*, written with Eric Duffey and four other Monk's Wood colleagues and published in 1974.

A legacy

So after Derek's good works and those of many other enthusiasts after him, where are we now with grassland conservation in Wales and elsewhere? One thing is certain: the value of old grasslands to nature conservation is now well understood and widely acknowledged - a case of better late than never. The rate of destruction has eased and much progress has been made in safeguarding the best examples of what remains. Outside nature reserves, most old grasslands now exist either on the dwindling number of traditional farms still managed by old-fashioned farmers or on small-holdings bought up by new incomers to the countryside. One usually finds that the traditional farmers have a great fondness for their old pastures and meadows, and many believe that the herb-rich swards are nutritionally good for the stock, so they are keen to retain one or two such fields on their farm. I have met some vets who are also convinced of the nutritional importance of herb-rich grasslands. However, when the old farmers pass on, there is a worry that their successors will not be so sympathetic and will improve the land.

In contrast, there is some reason to be optimistic as regards the smallholders. Often their circumstances are such that they do not have to rely on their land as their main source of income, and to them flowery grasslands and other wildlife habitats are an amenity to be treasured and enjoyed, and are often one of the reasons why they acquired the property in the first place. Examples of these 'new generation' smallholdings are not infrequent in mid Wales, and I dare say are now found throughout much of Wales. However, the management of these holdings can sometimes present a problem, as some owners do not have their own stock or machinery, and find it difficult to find others who can help. The result is that, with the best will in the world, the grass sward becomes rank and scrub begins to get a hold, leading eventually to a woody habitat. The cardinal rule is that flower-rich grasslands rely entirely on a regular and appropriate grazing or mowing regime for their survival – they must be held in check from the natural succession which otherwise takes place.

More needs to be done to quantify and locate the total old grassland resource in Wales. The so-called Phase 1 country-wide survey organised some years ago by the Countryside Council for Wales (CCW) and its predecessor, the Nature Conservancy Council, did not track down every site, for various reasons. For example, last summer, some hitherto unknown flower-rich grassland was found on a small old-fashioned farm which came on the market near Llanerfyl in Montgomeryshire. As the true extent of the total resource becomes known, CCW needs to designate more SSSIs as a matter of priority in order to ensure that, in Wales, we have a suite of protected grassland sites that truly represents the full range of natural and geographical variation. Proper management must then be encouraged by means of management agreements with site owners. The Wildlife Trusts also have an important role in assisting owners to protect grassland sites which do not meet the SSSI criteria, as every example of this scarce resource is valuable and assists in providing much-needed habitat connectivity in the countryside.

Whilst protection of existing sites must be the priority, efforts to recreate flowery grasslands should also be welcomed. Attractive seed mixtures are now available which produce colourful swards on suitable

soils. Experience to date has shown that grasslands containing attractive but rather less demanding species can be established, so long as the soil nutrient levels are not too high. Recreating examples of very old swards with scarce and specialised species is another matter, and has not been very successful. An interesting experiment has been carried out at Denmark Farm Conservation Centre* near Lampeter, in Ceredigion. Here pastures and hay meadows that were agriculturally improved in the past have been allowed to revert naturally by blocking land drains and taking the pressure off the land by abandoning intensive use. The results have been remarkable, with the fields having regained herb-rich swards, and getting better all the time. The farm is well worth a visit by anyone interested in the restoration and management old grasslands.

As to the future of our old grasslands, there is some room for optimism, as their conservation is now a popular cause, thanks to Derek Wells and his many followers. With so many changes in agriculture and the countryside taking place, we need to find ways of continuing the specialised management which these places require so that they remain a delight to the eye, as well as a storehouse of species for the future.

*** Denmark Farm Conservation Centre (Betws Bledrws, Lampeter SA48 8PB, Tel. 01570 493358, www.shared-earth-trust.org.uk) is open to the public and has self-guided walks. Technical advice is also available.**

Arthur Chater

Derek Wells (left) and Bill Condry at Rhos Llawr Cwrt

Chris Fuller was CCW's Area Officer for West Wales until his retirement in 2000. He is presently a trustee of the Montgomeryshire Wildlife Trust, the Campaign for the Protection of Rural Wales and the Shared Earth Trust.

Gwarchod Glaswelltir

Ychydig o bobl a deimlodd mor angerddol ac a weithiodd mor ddyfal i warchod hen laswelltiroedd â Derek Wells. Fel botanegydd amaethyddol gallai hefyd bontio â ffermwyr ; teithiodd dros Brydain yn ystod y 1970au a'r 1980au yn sgwrsio gyda pherchnogion tir a chadwraethwyr, fel ei gilydd, ac yn asesu gwerth gwahanol safleoedd. Iddo ef, glaswelltir da oedd un lle gallai gofnodi o leiaf 40 rhywogaeth! Yng Nghymru, cyfrannodd at waith fel sefydlu Gwarchodfa Natur Genedlaethol Rhos Llawr Cwrt yng Ngheredigion. Er bod sawl ffermwr traddodiadol yn gwerthfawrogi hen laswelltiroedd, a'r maeth arbennig sydd ynddynt, mae peryg o hyd iddynt ddiflannu pan fydd ffermydd yn newid dwylo. Mae tyddynnod efallai'n cynnig gobaith, gan fod y perchnogion yn llai dibynnol ar y tir am eu cynhaliaeth. Ond wedyn gall diffyg sgiliau, stoc ac offer olygu na chaiff y tiroedd hyn eu rheoli'n briodol.

Rhaid gwneud mwy i ieoli, gwerthuso a gwarchod hen laswelltiroedd Cymru. Er bod gwarchod safleoedd da yn flaenoriaeth dylid croesawu ymdrechion i ailgreu glaswelltir traddodiadol, er mor anodd yw adfer llystyfiant gyda phlanhigion prin ac arbenigol. Mae Fferm Denmarc, ger Llanbed, wrthi'n adfer gweirgloddiau a phorfeydd drwy gau ffosydd a rheoli'n llai arddwys.

Diolch i weledigaeth ac ymroddiad tawel pobl fel Derek Wells, mae gwarchod glaswelltiroedd traddodiadol yn faes poblogaidd bellach ac mae yna o leiaf lygedyn o obaith at y dyfodol

Y Goeden Rosod Gythreulig

Lluniau: Keith Jones

Mae llwyni rhododendron yn bla mewn rhai rhannau o gefn gwlad Cymru, yn enwedig ar rostiroedd ac yn ein coedwigoedd. Dyma blanhigyn sydd â'i fryd ar oresgyn, ond mae nifer o fudiadau ac unigolion wedi bod yn ymdrechu'n daer i atal ei ledaeniad, a'i drechu. Mae ***KEITH JONES*** *yn disgrifio cefndir a chyfrinachau'r gelyn hwn ac yn rhoi blas ar y brwydro sy'n digwydd rhwng dyn a dail.*

Le i bopeth, a phopeth yn ei le yw'r dywediad. Ac er y bydd garddwyr brwd yn siŵr o ddadlau bod yna le dilys i lwyni rhododendron yn ein gerddi, dyw'r Rhododendron wyllt (*Rhododendron ponticum* - *'Rhodo'* - rhosyn, *'dendron'* - coeden, o'r Groegaidd) yn ddim byd ond melltith ar ein cynefinoedd gwyllt. Mae yna fil a mwy o wahanol fathau o *R. ponticum* i'w cael, heb sôn am yr holl groes-rywogaethau. Mae *R. ponticum* yn un o'r bygythiadau pennaf sy'n wynebu rhostiroedd a choedwigoedd ar dir asidaidd. Mae amryw o fudiadau a thirfeddianwyr wedi bod wrthi'n brwydro'n ddyfal i geisio ymdopi â lledaeniad y planhigyn goresgynnol hwn - ac o'r diwedd, mae rhai ardaloedd yn gweld ffrwyth y llafur caled. Ond eto i gyd, mae digon o fannau yn parhau i fod dan fygythiad enbyd.

Cefndir

Yn groes i'r hyn y mae pobl yn ei gredu, nid oes gan Nepal na Tsiena unrhyw gysylltiad â R.ponticum. Mae gwell siawns o weld y planhigyn wrth grwydro yn ne Sbaen neu Portiwgal. Diddorol yw nodi bod y planhigyn

hwn dan fygythiad yn ei gynefin cynhenid a'i fod felly wedi ei restru yn y Llyfr Data Coch! Ond nid rhywogaeth bur o *R.ponticum* sydd ym Mhrydain, ond yn hytrach un o'r croes-rywogaethau niferus.

Cyflwynwyd y planhigyn i Brydain o gwmpas 1760, a hynny gan Jochiem Conrad Loddiges (1738-1826) a oedd yn feithrinwr enwog iawn yn ei ddydd. Fe ddaeth ag amryw o blanhigion i Brydain, yn cynnwys sawl math o riwbob.

Mae dau fath o *R.ponticum* i'w cael, sef *Rhododendron ponticum* isrywogaeth *ponticum* sy'n dod o'r mynyddoedd Pontic yn Nhwrci a *Rhododendron ponticum* isrywogaeth *baeticum* o Benrhyn Iberia. Yr isrywogaeth olaf hon, o Iberia, a ddaeth i Brydain.

Ond nid diwedd y siwrnai oedd hyn. Fe groeswyd planhigion y R. ponticum baeticum gyda dau fath arall o Rododendron, sef *R.maximum* a *R. catawbiense* sy'n blanhigion cynhenid yng ngogledd yr Unol Daleithiau. Pennod bwysig arall yn natblygiad ein planhigyn pla oedd y gaeaf caled iawn a gafwyd yn 1879; dyma pryd y lladdwyd y rhan fwyaf o'r planhigion pur, gan adael ar ôl y planhigion croesryw. Ac o'r rhain fe ddatblygodd y garddwyr yr 'iron clads' sef planhigion caled iawn. O'r rhain y tarddodd yr epil melltithiol a welwn o'n cwmpas ar rai o lethrau Cymru.

Roedd 'na sôn am Rododendron dros ddwy fil o flynyddoedd yn ôl, yn amser y Rhufeiniad. Disgrifiodd Pliny a Strabo sut y cafodd byddin y Groegwr Xenaphon ei dinistrio ar ôl i'r milwyr gael eu gwenwyno gan fêl Rhododendron. Mewn rhannau o'r byd mae un neu ddau o bobl yn dal i fynd yn sâl ar ôl bwyta'r mêl gwenwynig yma.

Arfau grymus

Mae'r *Rhododendron ponticum* croesryw wedi sefydlu troedle cadarn yn ein cynefinoedd Cymreig ac mae arfogaeth y planhigyn yn ei helpu i sefyll ei dir a chamu 'mlaen. Ymhlith yr arfau hyn y mae'r canlynol:

Gwenwyn - Mae Grayanotoxin ('polyhydroxylated cyclic diterpene') yn y paill, yn y dail ac yn y blodau.

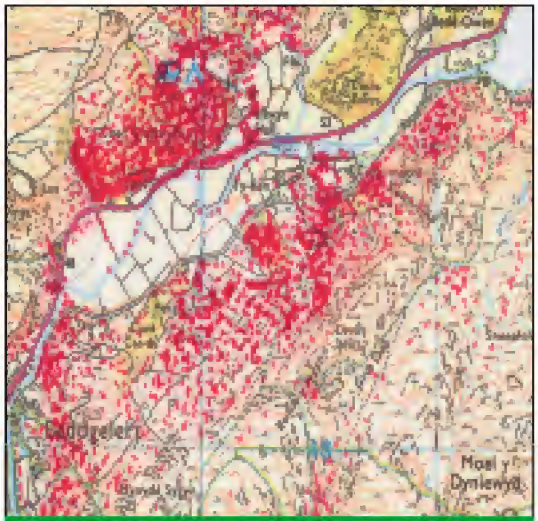
Mae hwn yn wenwynig i unrhyw anifail sy'n bwyta'r planhigion.

Cysgod - Mae'r dail trwchus yn bwrw cysgod trwm dros blanhigion eraill ac yn eu gwanhau. Gall planhigion *R.ponticum* dyfu'n llewyrchus gyda chyn lleied â 3% o olau dydd a gall ffynnu dan gysgod planhigion eraill

Hadau niferus - Bydd pob blodyn yn cynhyrchu dros bum mil o hadau bychain iawn. Gall y rhain gael eu chwythu hyd at gilomedr a hanner.

Tân - Mae ymchwil yn Nhwrci wedi dangos bod planhigion Rhododendron wedi addasu mewn modd sy'n eu galluogi i dyfu yn syth ar ôl tân neu ddifrod. Mae 'lignotuber' neu 'caudex' i'w gweld fel chwyddiadau ar y gwreiddiau ac mae'r rhain yn llawn startsh i roi hwb i aildyfiant y planhigion dan amgylchiadau o'r fath.

Newid natur y cynefin - Mae cryn dipyn o sôn am y posibilrwydd bod y planhigyn yn gallu atal planhigion eraill rhag tyfu (ffenomenon a adwaenir fel 'allelopathy') ac er nad oes tystiolaeth gadarn o hyn mae'n bosib bod y gwenwyn yn y dail yn chwarae rhyw ran yn y broses hon. Mae'r gweadwaith ffwng (mycorhisa) sy'n gysylltiedig â gwreiddiau *R.ponticum* yn rhoi cryn fantais i'r planhigyn gan ei fod yn ei alluogi i dyfu mewn priddoedd gwael iawn. Yn wir, os ewch chi i Feddgelert ac edrych i gyfeiriad Craig y Llan fe



Rhododendron yn ymledu yn ardal Beddgelert
The spread of rhododendron around Beddgelert

welwch ddail y llwyni Rhododendron yn creu stribed melyn i lawr y llethr - er bod presenoldeb y copr yn y pridd wedi atal tyfiant planhigion eraill dim ond newid lliw dail y llwyddodd wneud yn achos y Rhododendron!

Rheoli'r pla - Y Frwydr Fawr

Bu'r Ymddiriedolaeth Genedlaethol yn ymdrechu ers pymtheng mlynedd i reoli *R. ponticum* yn ardal Beddgelert a Nantgwynant. Mae ardal Nantgwynant ar ochr ddeheuol yr Wyddfa ac mae'n cynnwys tir sy'n disgyn o gopa'r Wyddfa i lawr at lefel y môr wrth Aberglaslyn. Mae'n cynnwys pentref Beddgelert a chymunedau Nantmor a Nantgwynant. Dechreuwyd ar y gwaith o ddifa'r planhigyn yn yr wythdegau ; bryd hynny amcangyfrifwyd bod *R.ponticum* yn tyfu dros rhyw 1500ha o dir. Ar fap a luniwyd i fonitro presenoldeb a lledaeniad y planhigyn yn yr ardal mae'n hawdd gweld bod y planhigion wedi tarddu o'r tai bonedd yn y dyffryn - o Neuadd Aberglaslyn yn y de i Dy Bryn Gwynant yn y gogledd. Yn yr Oes Fictoraidd roedd gan y tai hyn erddi mawreddog ac roedd R.ponticum yn cyfrannu'n sylweddol at ffurf y gerddi hyn. Gyda hinsawdd wlyb a ffriddoedd sur gogledd Cymru, hwn oedd y planhigyn i roi sylwedd a gwreiddgyff i lu o blanhigion eraill. Yn niwedd yr 1980au roedd 80ha o *R.ponticum* yn bresennol ar dir neuadd Craflwyn, sy'n gorwedd yng nghanol y Dyffryn ac sydd bellach yn ganolfan i'r Ymddiriedolaeth Genedlaethol yn yr ardal. Gerddi'r tai bonedd hyn, lle tyfai'r llwyni *R.ponticum* hynaf a mwyaf sylweddol o ran maint, oedd yn gyfrifol am hybu lledaeniad y planhigyn drwy'r fro, gan fwrw cannoedd o filiynau o hadau i'r gwynt bob blwyddyn.

Mae dau o'r 'stadau bychain yma, sef Craflwyn ac Aberglaslyn, wedi llwyddo dianc o grafangau *R.ponticum* erbyn hyn. Ond mae tipyn o waith ar ôl i'w wneud os ydym am lwyddo difa epil llwyni Craflwyn a Aberglaslyn, sydd i'w gweld ar lethrau mynydd Sygyn gyferbyn â Chraflwyn. Y ddwy ardal allweddol sydd ar ôl i'w clirio yw Bryn Gwynant a Choed yr Eryr ym mhen gogleddol y dyffryn. Mae'r planhigion ar y llethrau hyn yn agosáu'n beryglus at ardaloedd y Moelwyn a'r Glyderau ac yn aros eu cyfle i oresgyn. Mae'r amser yn prinhau.

Os am werthfawrogi pa mor frawychus yw'r sefyllfa, dilynwch y lôn fechan i fyny at Gelli Iago a Blaen Nantmor o ben gogleddol Llyn Dinas. Ar ben y lôn edrychwch i'r chwith ac fe welwch olygfa anhygoel o'ch blaen. Mae llwyni'r *R.ponticum* yn drwch dros y mynydd a'r tyfiant yn edrych fel magma gwyrdd sy'n llyncu bob dim wrth symud yn ei flaen. Yn fy nhyb i, mae'r ardal hon wrth gefn Coed yr Eryr gyda 400 ha o *R.ponticum* yn un o'r mannau gorau yng Nghymru i ddangos maint gwirioneddol y bygythiad.

Does dim ateb hawdd i'r her hon. Os am ddifa *R.ponticum* rhaid defnyddio cyfuniad o gynllunio gofalus, technegau pwrpasol a gwaith caled. Mae Warden Ymddiriedolaeth Genedlaethol yr ardal, Dave Smith, yn un o'r bobl mwyaf profiadol yng Nghymru o safbwynt rheoli *R.ponticum*. Mae wedi llwyddo dysgu a datblygu system o reoli'r planhigyn sydd i'w weld yn gweithio'n effeithiol iawn.

Bellach, mae gan reolwyr tir nifer o arfau i helpu concro'r *R.ponticum*. Ond rhaid gwybod pa un i'w ddefnyddio, pa bryd i'w ddefnyddio ac ym mha le. Un o'r pethau elfennol i'w ystyried yw'r amcanion ar gyfer y safle, oherwydd bydd hyn yn penderfynu pa dechnegau i'w defnyddio. Dylid ystyried, er enghraifft, a yw'r tir dan gynllun organaidd, fel fferm

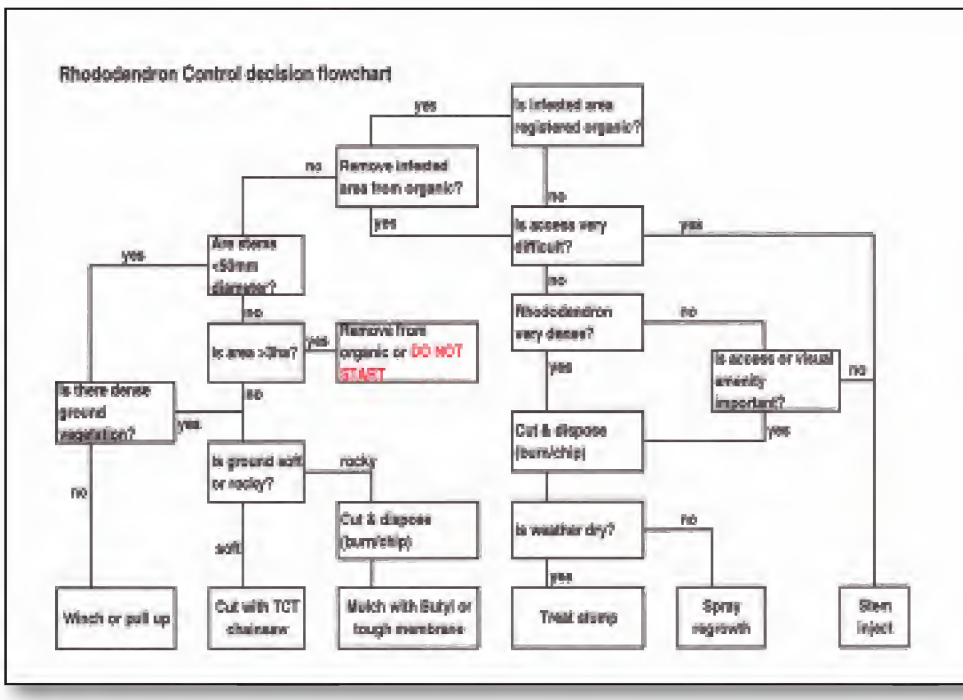
Hafod y Llan yn Nantgwynant? Os felly, rhaid ymatal rhag defnyddio chwynladdwyr, neu dynnu'r tir allan o'r Cynllun Organaidd er mwyn gallu difa'r rhododendron gyda chemegolion. Mae'r Ymddiriedolaeth Genedlaethol ac eraill wedi datblygu technegau mecanyddol i'w defnyddio ar dir organig; winsh i dynnu'r planhigyn allan o'r ddaear os yw'r dirwedd a'r priddoedd yn caniatáu, torri'r tyfiant allan o'r ddaear gyda lli gadwyn twngsten carbeid neu, ar ôl cwympo'r llwyn, rhoi defnydd dros y bonyn er mwyn atal golau. Os oes modd defnyddio chwynladdwyr, gellir trin y planhigion mewn gwahanol ffyrdd - yn dibynnu ar natur y planhigion a'r dirwedd (e.g.chwistrellu mewn i dwll dril, chwistrellu dros y dail, peintio'r chwynladdwr dros y bonyn yn syth ar ôl ei dorri).

Rhaid cofio ffactorau elfennol eraill hefyd - er enghraifft, mae'n bwysig dechrau'r gwaith ar safleoedd mawr gyda'r gwynt wrth eich cefn ac wedyn parhau i weithio gyda'r gwynt. Mae'n rhaid gwneud hyn neu bydd yr hadau'n cael eu cludo nôl i ail sefydlu ar dir a gliriwyd. Dyma oedd un o'r rhesymau pam y dechreuwyd ar y gwaith yn Nantgwynant ac Aberglaslyn a gweithio i fyny'r Dyffryn.

Torri o'r cyrion i'r canol, neu o'r canol i'r cyrion?

Mae tipyn o drafodaeth wedi bod ynglŷn â hyn. A ddylid mynd i safle mawr (cannoedd o hectarau) a allai gymryd rhai blynyddoedd i'w glirio a dechrau clirio o'r ymylon at y canol neu ddechrau gyda'r llwyni mawr a hen yn y canol a gweithio allan at yr ymylon?

Ym mhrofiad yr Ymddiriedolaeth Genedlaethol, difa o'r cyrion a symud mewn at darddiad y lledaeniad sydd orau os am gynnal y 'status quo'. Fe fydd yr hadau yn dal i gael eu cynhyrchu gan y planhigion mawr yn y canol. Ond os oes diffyg arian mae hyn yn ffordd briodol o atal y planhigion rhag ymledu'n bellach, er y bydd rhaid mynd nôl yn aml at yr ymylon. Os oes digon o adnoddau ar gael, mae torri'r llwyni mawr yn y canol a gweithio allan at yr ymylon yn ymddangos yn ddull mwy llwyddiannus. Rhaid cofio nad yw *R. ponticum* gwyllt yn cynhyrchu blodau am oddeutu chwech i ddeng mlynedd ac felly mae yna



The cursed rhododendron

Rhododendron ponticum (rhododendron literally means 'rose tree') has become a curse of some of our wild habitats. Horticulturalists imported its parents and developed a robust hybrid able to thrive in our moist climate, and which survived when its parents were killed in the severe winter of 1879.

As well as possessing hybrid vigour, this rhododendron contains a poison which prevents livestock grazing it; is shade tolerant yet shades out wild plants; produces an abundance of wind-blown seed; and responds to fire by rapid re-growth.

The National Trust has been trying to control rhododendron, which has spread from big houses around Beddgelert, for fifteen years. Clearance has been achieved on two small estates, but there are still hundreds of hectares dominated by it which need to be cleared. Various techniques have been tried, including mechanical removal on organic land, but the battle continues. As a superbly adapted species, the rose tree deserves respect, but remains a great threat which must be controlled.

amser i weithio allan at yr ymylon os penderfynir dewis y dechneg 'canol i'r cyrion'. Ond mae yna rybudd hefyd - oherwydd bod *R. ponticum* yn gallu aros fel eginblanhigyn am flynyddoedd bydd unrhyw newid yn ei gynefin (megis difa'r planhigion eraill yn y cyffiniau) yn debygol o achosi llu o blanhigion i flodeuo yn fuan iawn ar ôl i chi fod yn gweithio ar y safle.

Dros y blynyddoedd rhoddwyd cynnig ar lu o wahanol dechnegau i geisio rheoli *R.ponticum* - ffustio gyda pheiriant, chwistrellu yn y gaeaf, llifanu bonyn, malu gyda llaw ac wedyn rhwbio blagur, winsio o'r ddaear, taenu gwahanol gemegolion (halen, ammonium sulphamate), rhoi calch ar y tir ac yn y bonyn, atal golau - mae pob un yn gweithio i raddau ond mae cost yn ystyriaeth bwysig iawn wrth geisio dewis dull rheoli, ac mae penderfynu ar yr amcanion ar gyfer y safle, fel y trafodwyd eisoes, yn allweddol hefyd. Pa bynnag ddull a ddewisir, mae rhyw fath o ddifrod yn anochel bob tro ond bychan yw hyn o'i gymharu â'r dinistr y mae'r planhigyn ei hun yn ei greu.

Mae'r planhigyn hwn yn elyn a grëwyd gan ddyn i ymdopi gyda hinsawdd, tirwedd a ffriddoedd Cymru. Ac on'd yw e'n gwneud yn dda!

Mae'r planhigyn yn haeddu parch oherwydd iddo lwyddo cystal - ond parch i elyn sydd angen ei drechu yw hwn. Os ydym, o ddifrif, am weld ein cynefinoedd cynhenid yn ffynnu ac yn ymdopi ac addasu i her newid yn yr hinsawdd, fe fydd rhaid rheoli'r goeden rhosod.

Mae Keith Jones yn gweithio i'r Ymddiriedolaeth Genedlaethol fel Rheolwr Cefn Gwald Gorllewin Eryri a Phen Llŷn.

Cyfeiriadau

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Butterflies at Lavernock

Shane Farrell

Orange tip butterfly

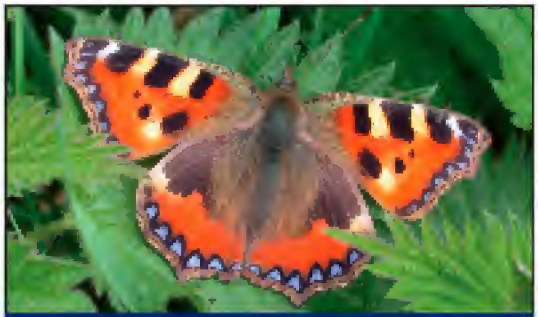
The extraordinary commitment of volunteers means that some of the best long-term studies of sites and species have been made by amateur naturalists; and often their value extends far beyond the particular site. ***JOHN ZEHETMAYR*** *has been monitoring the butterflies at Lavernock for nearly four decades. Here he describes the site, its management, and the results he has observed from the last twenty-five years of butterfly-watching.*

Lavernock Point Nature Reserve consists of 8 ha (20 acres) of semi-natural vegetation on the coast five miles south of Cardiff. It lies on Jurassic limestone above the 35m cliffs of the Penarth Coast SSSI and is managed by the Wildlife Trust of South and West Wales. Within half a mile is the extensive Cosmeston Lakes Country Park which has comparable habitats as well as wetlands – not too far for many species to migrate.

The reserve is composed of five sections from north to south. The two northernmost areas, Oak Copse and Old Hayfield, were added to the reserve in 1990, are not SSSI and are not the subject of this article except where specifically mentioned. The three southern sections, two open areas separated by scrub and ashwood, form the original Old Reserve of 5.8 ha (14 acres). The reserve was established in 1967 and received SSSI status in 1984 in recognition of its rich flora and butterfly fauna, as well as its long recognised importance for bird migration.

Used for an Artillery Battery in the last war, 1947 aerial photos show a small area of scrub and an inland hedge on long uncultivated grassland

Shane Farrell



Small tortoiseshell

Shane Farrell

Holly blue

Shane Farrell

Green veined white

with traces of ploughing and the military concrete structures (now a Scheduled Ancient Monument), slit trenches and perimeter fence. By 1967, in part at least due to myxomatosis decimating the rabbit population, the scrub had colonized over a third of the area, and the then Glamorgan Trust's plan was to try to maintain two thirds as open grassland. The acquisition report noted that dense growth of bramble, hawthorn and

After the clearing up

Shane Farrell

Comma

Shane Farrell

Small skipper

ash had spread in the previous 20 years, and that the site supported dyer's greenweed, and spotted and bee orchids with other limestone species.

Volunteers cutting this invasive scrub by hand saved about 20-25 % of the area as grassland. Then in 1998 the Trust, with Heritage Lottery funding, got paid staff, transport, and machines and at last it became possible, year by year, to push back the scrub and even the ashwood, to which parts had succeeded. The current position is that 35-40% of the old reserve is now open; not all the cleared areas are back yet to grassland but cowslips, fleabane and devil's bit scabious flourish where five years ago there was three metre scrub. Now our local volunteer group with our own brushcutter (thanks to CADW to maintain the cleared AA Battery) is backed by working parties from Trust HQ, wielding chainsaws, brushcutters, and tractor and mower.

John Zehetmayr

John Zehetmayr

The team at work clearing the scrub

At the current rate of clearance, just under 0.2 ha (half an acre) a year, we are about halfway to the goal set 40 years ago of two thirds grassland with the rest a patchwork of scrub and ashwood. In the absence of grazing – still an aim – maintenance of the open areas by brushcutter and mower is a growing task with specific areas designated for annual, biennial or five-yearly cutting cycle to vary the height and composition of the sward.

Butterfly recording

I have recorded the butterflies of Lavernock since the late 1960s. Without the 35 years of work parties all but the southern tip, subject to heavy salt spray, would now be a flourishing ash wood with the majority of the ground flora suppressed, and in due course the old hayfield would have followed. This work has been holding back natural succession and, short of an alternative regime of controlled grazing, must continue indefinitely.

In the early years when I was in full employment with the Forestry Commission I merely recorded species, mainly on weekend Trust working parties, and the list went in for the Provisional Atlas (1970). I became the Trust's voluntary warden in 1976 and on retirement in 1982 it became possible to do more recording, which included detailed counts based on the method set out by Pollard et al (1975).

The method has changed little over the 25 years 1982-2006. Choosing a sunny warm day, I would walk for an hour round a figure of eight course, to cover all the habitats of the original reserve, including short stretches within the trees for the speckled woods, counting butterflies five metres on either side of the path. Before it was added to the reserve, I noted species when crossing the hayfield and put them in as present; this has applied in particular to the purple hairstreak, virtually confined to the oak copse.

Commoner resident butterflies

There are 19 mostly resident butterflies recorded in virtually every year, though a few have been missed in some years. Three species of the 19 have arrived or disappeared over the years. They are:

- comma - only two individuals were seen in the first five years after which this species became established;
- ringlet - two were seen in 1985, it became regular from 1987 and has been abundant or very abundant from 1991 to date;
- small heath - sadly this species, regular for 20 years, has not been seen since 2001.

A detailed analysis of changes in the frequency of these 19 species can be summarised below. Numbers seen on any visit are normally quite small, under ten, but where numbers exceed ten, this is indicated in brackets. As always, numbers vary greatly with different species peaking in different years:

Substantial increase	Orange tip, comma
Substantial increase but slight decrease recently	Red admiral, ringlet (20)
A small increase	Brimstone, small/green veined whites (10)
A small increase but with recent fall	Painted lady, peacock, speckled wood.
Overall increase but with fluctuations	Gatekeeper (50), meadow brown (20)
Little change, peak in mid 90s	Small and large skippers
Little change, but fluctuations	Small copper, common blue (10)
Little change, but wide fluctuations	Small tortoiseshell
Slight decrease, peak in mid 90s	Dingy skipper, large white (10)
Substantial decrease, then lost	Small heath

That so many species show a fall in recent years is a cause for concern; in particular the small tortoiseshell has become rare. However, a comparison can be made between the last ten years at Lavernock and the figures given in *The State of Butterflies in Britain and Ireland* (Fox et al. 2006) for these 19 species:

Lavernock 1997/2001 to 2002/6
Decrease - 10, Increase - 9
Fox et al*: Population trend 1995-2004 for Britain:*
Decrease - 13, Increase - 6

It would appear that it is weather rather than habitat that has been responsible for the recent decline in populations, while the overall shift from shorter to taller grass swards would seem to have altered the balance of the Browns (gatekeeper, meadow brown, small heath and ringlet) over the years. While the gatekeeper has shown a decline in recent years, it remains the most populous species, reaching its peak on 16th August 1991 with over 300 present, by which time one is estimating rather than counting. The management regimes now underway will diversify the sward and should accommodate all four Browns.

There are some half dozen 'speckled wood tunnels' on the reserve where bushes, mainly hawthorn, have closed over grassy paths. We have opened up by selective cutting to let in more light. The most recent felling of part of the ashwood has removed one side of such a tunnel and it will be interesting to see if it continues as a location for this species. It would appear that individuals of the late third brood move out more into the open than the earlier ones.

In ordinary years all five species of Vanessids (comma, red admiral, peacock, painted lady and small tortoiseshell) are widely distributed over the reserve but it is notable that in drier seasons they congregate on the lower, damper areas of the two meadows for nectaring. One of the sights of Lavernock can be an assembly of Vanessids on the massed devil's bit scabious and fleabane of late summer.

John Zehetmayr

Clearing up the first ash felling

Uncommon species and occasional visitors

There are ten other species which are seen from time to time:

- **Dingy skipper**, generally seen in small numbers, reached 'abundant' in 1992 with 32 on 21 May. This species seems to be associated with the dry bomb hole at the south end. Living there would be warmer than in the open. The only time I have seen a mating pair, they were in the Home Guard slit trench!
- **Purple hairstreak** is a long term resident of the Oak copse, recorded there from time to time, with up to a dozen seen on a fine evening in 2006.
- **Clouded yellow** was abundant in 1983 when it undoubtedly bred locally, and was frequent in 1992 & 2000.
- **Monarch** was seen by David Gilmore in both 1995 and 1999, years when a number were recorded along the south Wales coast.
- **Holly blue** has been seen in 13 years. In the absence of holly one queries where the spring brood lay their eggs. Gorse, dogwood or buckthorn are all possible hosts.
- **Dark green fritillary** has only been positively identified in three years, but there have been other years when soaring pairs have been surmised to be of this species. At least two of the host violets are present.
- **Wall** and **grayling** may benefit from a much increased area of exposed concrete surrounded by

Shane Farrell

Meadow brown

open areas resulting from efforts to conserve the AA battery. The wall has been recorded in 13 years but the grayling in only two.

- **Marbled white** occurs some distance to the east and west in Wales, and Lavernock would seem to provide typical habitat. The singleton recorded in 1995, however, most probably came on an east wind some eight miles across the Bristol Channel from the Somerset coast, where it is well established. If only it had been a gravid female!
- **Green veined white**, recorded in 13 years when settled, may be plentiful; numbers are aggregated with small whites when flying.

Other species

A check of the recent distribution maps, both for Glamorgan (Stewart 2006) and Britain (Fox 2006) suggests three as potential species for Lavernock: grizzled skipper, Essex skipper on its westward progress and perhaps even green hairstreak, for all of which we have the host plants.

Given all the management work and suitable weather, I am hopeful that we may see an increase in the variety and numbers of butterflies at Lavernock. For this reason I would hope to continue with my somewhat outdated survey method and if, at 85, my time is limited, I hope my colleagues of the Lavernock Working Party will carry on for many more years.

Conclusions

It would appear that Lavernock has done rather better than the country as a whole. Had this not been the case and the decline been against the general trend, we would have had to reconsider our work plan. Given the time lag of two or three years between clearance and re-establishment of the floral sward, it is only from about 2000 that the steady decline of the grassland in the 'old reserve' was reversed. However, starting from about 1990, the adjacent Old Hayfield was reverting to a semi-natural state with a major increase of spotted orchid and fleabane among others, adding some 50% to the grassland of the whole reserve and thus compensating for our failure to achieve the aim set so long ago for the old reserve. Clearly, although butterflies seen there are not included in the counts, this is a major advance in the area available to them and reduces the gap between the reserve and Cosmeston Lakes Country Park. Much of the intervening area - about one kilometre square, which includes an abandoned railway line - is not intensively used, most of the area being grazed by horses, so forming a buffer for both reserve and park.

Checklists of flora by my fellow warden Jeff Curtis in 1991 and 2006 include the food species for almost all the species seen as quoted by Thomas (1986), though there are few nettles for the Vanessids and no holly for the Blue. Food plants present in some quantity but localised within the reserve include black mustard, bird's foot trefoil and rockrose. Almost thirty grasses were listed in 2006, and our aim is to maintain a variety of swards by different

brushcutting regimes. The introduction of grazing remains an objective for the fenced area of the Old Hayfield and North Meadow but there are considerable difficulties to overcome, while for the south end the unfenced high cliffs make grazing a non-starter.

Acknowledgements: First to Jeff Curtis who has worked at Lavernock for 30 years and joined me as warden on retirement, and to Colin Vyvyan of the local working party for most useful comments on this paper; to the many staff and volunteers of the Trust who have toiled on the reserve over the years, in the last ten with the vital machines, and to the many other groups who have worked there; in particular to Cardiff Conservation Volunteers, our mainstay for many years pre Heritage Lottery Funding. Without their efforts the old reserve would be an ashwood.

John Zehetmayr worked for the Forestry Commission, where he was Senior Officer Wales 1966-81. Since then conservation has been a main interest and he recently received a Wales Volunteer of the Year Award, 2007.

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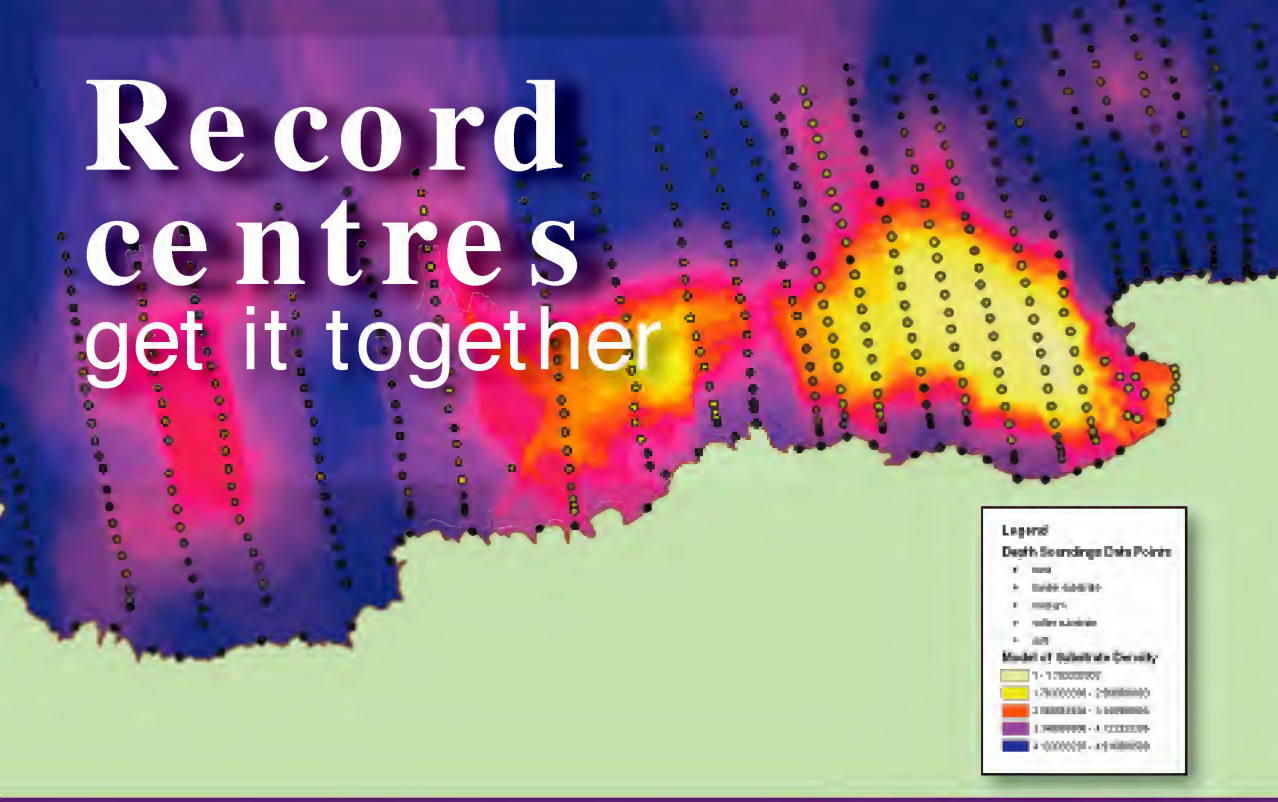
Shane Farrell

Cynnwrf yng Nghasnewydd

Pan sefydlwyd Gwarchodfa Larnog yn 1967 y nod oedd cynnal 75% o'r safle fel glaswelltir calchaidd agored a gadael brithwaith o brysgwydd a choed ynn dros y gweddill. Gyda chymorth gwirfoddolwyr a pheiriannau llaw, diriwyd hanner y tyfiant a dagai'r tir. Ymddangosodd blodau fel briallu Mair a thamaid y cythraul yn sydyn ar ôl gwared y coed. Ond bydd rhaid parhau â'r gwaith hwn i ffrwyno lledaeniad prysgwydd a chynnal glaswelltir agored - oni bai bod modd pori'r tir.

Cofnodwyd gloÿnnod byw ar y safle ers 35 mlynedd. Gwelwyd 19 rhywogaeth bron bob blwyddyn. Mae'n ofid bod cynifer ohonynt, fel yr iâr fach amryliw, wedi prinhau yn ddiweddar - ond y tywydd ac nid dirywiad cynefin sy'n gyfrifol. Y porthor yw'r glöyn byw mwyaf niferus, ond bydd y pedwar math o löyn byw 'brown' yn elwa os llwyddir amrywio strwythur y glaswelltir. Mewn ambell fan crëwyd 'twnelau goleuni' yn y coetir ar gyfer brych y coed ac mae rhannau gwlypach y safle yn lecynnau bwydo gwerthfawr i'r pum math o löyn Vanessid yn ystod tywydd sych. Cofnodwyd 10 rhywogaeth arall yn achlysurol yma - fel y brithribin porffor a'r iâr fach felen. Mae mapiau dosbarthiad gloÿnnod byw ym Morgannwg a Phrydain yn dangos mai dim ond tair rhywogaeth bosib sydd heb eu cofnodi eto yn Larnog. Ond mae eu planhigion bwyd yn bresennol ac efallai gwelwn y gwibiwr brith, y gwibiwr bach corddu a hyd yn oed y brithribin werdd yma rywbryd yn y dyfodol.

Record centres get it together



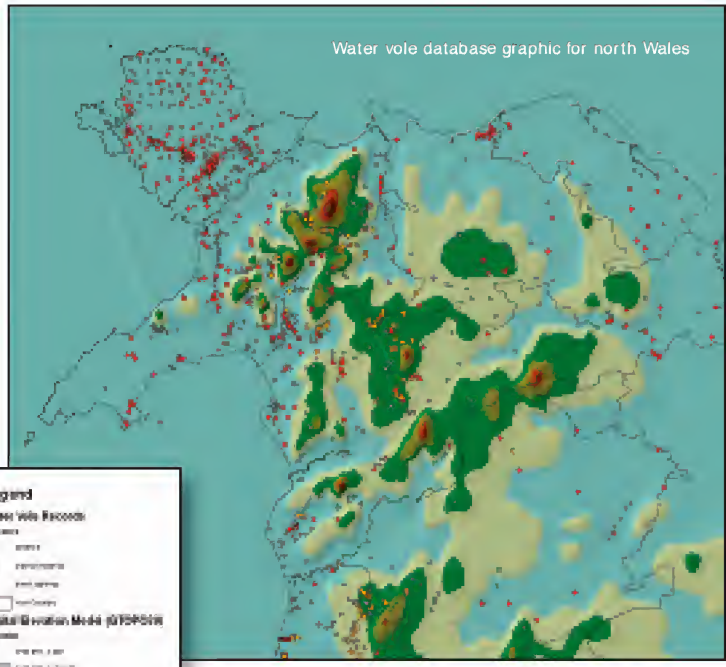
Mapping the seabed favoured by bottlenose dolphins for foraging at Mwnt, Cardigan Bay

It has been a long-held dream to bring together detailed information about the natural environment and make it readily accessible. Wildlife is often lost through ignorance but, with the right information and a little care, contractors and others can avoid sensitive wildlife sites, and we can all know more about nature in our locality. Now that dream is becoming a reality, as a network of Records Centres across the country gets up and running. ***ROB DAVIES*** *fills in the background.*

We are exceptionally fortunate in the UK, and especially in Wales, to have a strong tradition of amateurs recording the natural history of our environment in all its variety. The National Biodiversity Network (NBN) was established to support this huge effort, and help put the management of this information on a more secure financial footing. Now four Local Records Centres (LRCs) have joined forces to manage and serve biodiversity data across the whole of Wales. LRCs have been introduced in many parts of the UK to function as regional nodes in the NBN, but Wales is the only country in the UK to have achieved full continuity. This coming of age was celebrated at the National Museum of Wales in Cardiff last November. The Minister for Sustainability and Housing, Jane Davidson, congratulated all those involved with the establishment of this new network on their achievements, and speakers explained why it was such a landmark for them.

A Local Records Centre is defined as a not-for-profit service run in partnership for the public benefit, which collects, collates, manages and disseminates information of known quality relating to the wildlife, wildlife sites and habitats within a defined geographic area. LRCs do not normally 'own' their data holdings but are granted the authority to use them wisely and to make appropriate recovery charges for time spent servicing data requests.

The four Welsh LRCs are large enough to accommodate sufficient Local Planning Authorities for the centres to be sustainable, but small enough for them to maintain personal contact with data providers and users. We work very closely with the National Parks and Local Biodiversity Action Plan regions to establish standards and provide continuous biodiversity data. A good test of this co-ordinated network has been the recent disentangling of duplicate records from the all-Wales Water Vole database on behalf of Environment Agency Wales.



From the results of our co-ordinated look at the pattern of water vole records across Wales, it has been possible to identify water vole population strongholds. These have not always been in expected places; this exercise has shed light not only on where conservation effort would be most effectively targeted, but also what habitats would be worth looking at again.

Birth of records centres

Welsh LRCs started life a decade ago when work began on the first prototype, the Biodiversity Information Service for Brecon Beacons and Powys (BIS) in east Wales. BIS became operational in 2001, (*Natur Cymru* 2:44) followed by the South East Wales Biodiversity Records Centre (SEWBReC) in 2005, North Wales Environmental Information Service (COFNOD) in April 2007, and finally West Wales Biodiversity Information Centre (WWBIC) in September 2007.

Together, Welsh LRCs now maintain in excess of two million records of species, many of which emanate from surveys organised by the Countryside Council for Wales. The establishment of the Records Centres has been supported by CCW and other major users of the data, including Welsh Assembly Sponsored Bodies and Local Planning Authorities. These funding partners need the biological data in order to fulfil their statutory requirements - they must 'have regard' for biodiversity conservation while carrying out their planning and land management activities.

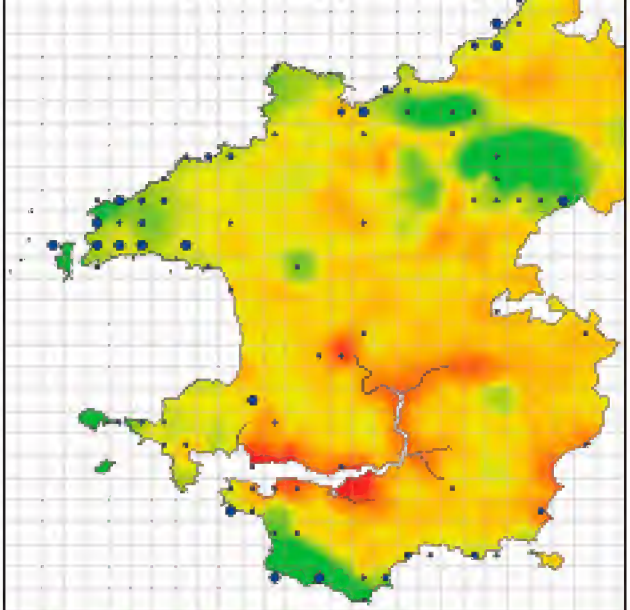
Specialist personnel in Local Records Centres manage huge quantities of data and information which may, over time, run into millions of biological records. The data are securely housed in databases which may be interrogated and analysed using geographic
information systems (GIS) software to provide quick reporting on what is known to occur where. For planning purposes and the management of land-use practices that may be harmful to wildlife, this is an essential and highly welcome toolkit for Welsh conservationists and decision-makers.

Previously, a huge amount of biological information has been held by many different people on paper, in filing cabinets, or in a large variety of different computer packages. It has simply not been possible for any one person to access all of this information for one region. Through the support of CCW, LRCs are mobilising and unlocking these information datasets one by one so that the people who need to know the

facts now, and in the future, have them at their fingertips.

Wealth of recorders

Many LRC records (up to 70% in some cases) are collected by natural historians who do so for a love of biology. Whether professional or amateur, Britain has an unprecedented density of biological recorders, whose activity and records, now organised through LRCs, offer a reliable land management tool. Local Records Centres recognise the duty they have in return to support the biological recording community. They do this with newsletters, forums, technical help, extending software licences, data mobilisation, analysis and help with atlas publications.



Habitat suitability for kestrels in Pembrokeshire

Biological recorders organise their activities by Vice County. A single recorder in each county is appointed as a 'County Recorder' for a particular taxon group and his/her role is to vet incoming records. LRC personnel work closely with these County Recorders in order to maintain standards of data quality - the taxonomic status of records is verified and the details of data entry are checked or validated.

The essentials of a species record are: what it is (species), who recorded it (recorder), when (date) and where (grid reference). Many recorders also include a fifth 'comments' field into which the detail of the observation is added. So it really is quite a simple exercise to submit records in a spreadsheet to the Centre, or to the County Recorder if you know them.

In addition to species records which are held as point data in geographic information systems, LRCs hold extensive data on protected sites such as SSSIs and European designations and on habitats - all of which are stored as polygon data in the GIS. The core service of the LRC is to provide reports of protected species, habitats and sites for a given location. LRCs spend much of their time reporting on planning applications, future large scale developments and engineering maintenance sites, to ensure that allowed activities do not impact illegally or unnecessarily on vulnerable wildlife. A typical report would be sent back from the LRC to the person requesting the information in a matter of days. Wales LRCs have now begun to test a number of ways in which regular users may query the databases instantly through the web.

With their extensive computer capabilities, LRCs can also offer enhanced data services as regional environmental information systems. It makes sense for specialised teams to manage these complicated spatial data, and the information may find wider use. In West Wales the LRC is trialling the use of summarised biodiversity information for sustainable tourism, managing recreational activities, diversification of land-use on farms, and education. LRCs abide by CCW's protocols concerning the release of information on sensitive features and each exercise has to be carefully checked with the authorities and with the recorders so that vulnerable wildlife or sites are not disclosed.

LRCs strive to help recorders get the most out of their records and data. Cardigan Bay Marine Wildlife Centre, for instance, has asked its LRC to map bottlenose dolphin sightings for a photo-ID catalogue, and also to map special underwater habitats from sonar data. A case study in Pembrokeshire has been the mapping of suitable habitats for putting up

nestboxes as part of the Kestrel Species Action Plan.

The map on the left reveals the Pembrokeshire landscape as a kestrel might view it. We generated the map from the Phase 1 vegetation classification. Each vegetation class was given a value ranging from 0 to 10 based on its suitability as foraging habitat for kestrels. We converted the tiny vegetation polygons into a fine-scale grid. Then, using ESRI's spatial analyst tool, we summed all values within a range of 1500m for each grid cell, this being the average foraging distance of a nesting pair of kestrels, and derived the average. This had a smoothing effect on the landscape and revealed some very obvious favourable areas for nesting kestrels (green) and some very obvious unfavourable areas (red). When we compared this map to the current distribution of kestrels (Pembrokeshire Bird Atlas for 2003-6) we obtained a highly significant positive correlation. But not all green areas offer safe nest sites. Biodiversity Officer Bethan Cox used this map to choose locations for 50 new nestboxes designed to boost the local kestrel population.

Biodiversity data or other services for any location in Wales may now be requested from the following contact points:

Biodiversity Information Service for Powys and Brecon Beacons National Park (BIS), First Floor Offices, 7 Wheat Street, Brecon, Powys, LD3 7DG. Telephone: **01874 610881.**
Email: **info@b-i-s.org**

South East Wales Biodiversity Records Centre (SEWBReC), 13 St. Andrew's Crescent, Cardiff, CF10 3DB. Telephone: **029 2064 1110.**
Email: **info@sewbrec.org.uk**

Cofnod (North Wales Environmental Information Service), Intec, Ffordd y Parc, Parc Menai, Bangor, Gwynedd, LL57 4FG. Telephone: **01248 672603.** Email: **info@cofnod.org.uk**

West Wales Biodiversity Information Centre (WWBIC), Landsker Business Centre, Llwynybrain, Whitland, Carmarthenshire, SA34 0NG. Telephone: **01994 241468.** Email: **enquiries@westwalesbiodiversity.org.uk**

A new website has been established, **www.lrcwales.org.uk**, which acts as a gateway to the websites of the individual LRCs. Visitors to the LRC websites will be able to learn how to submit records, and how to request a data search, as well as finding out about the range of products and services that LRCs offer.

Rob Davies is Manager, West Wales Biodiversity Information Centre.

Cyd-dynnu dros fywyd gwyllt

Mae gwybodaeth dda yn hanfodol ar gyfer gwneud penderfyniadau call. Nod y pedair canolfan cofnodi leol yng Nghymru yw casglu, didoli, rheoli a rhannu gwybodaeth am yr amgylchedd naturiol. Mae'r cydweithrediad agos rhyngddynt yn helpu cynnal safonau a sicrhau bod y cofnodion yn rhoi'r wybodaeth orau bosib i helpu ymdrechion cadwraethol.

Sefydlwyd y canolfannau gyda chymorth cyrff llywodraethol ac awdurdodau lleol, sy'n gorfod rhoi ystyriaeth bellach i fywyd gwyllt wrth gyflawni eu gwaith dyddiol. Prif wasanaeth y canolfannau yw creu adroddiadau am rywogaethau, cynefinoedd a safleoedd allweddol, ond cymerir gofal i sicrhau na chaiff gwybodaeth sensitif ei ryddhau. Seilir yr adroddiadau ar gofnodion - 2 filiwn ohonynt hyd yma. Unigolion brwyd sy'n gyfrifol am lawer o'r rhain. Gall y canolfannau helpu'r cofnodwyr hyn drwy safoni data, rhannu newyddion, estyn trwyddedau meddalwedd, symud a dadansoddi data a chynhyrchu atlasau.

Yn ddiweddar, bu'r canolfannau wrthi'n mapio cynefinoedd addas ar gyfer blychau nythu cudyllod coch yn Sir Benfro, yn mapio arsylwadau o'r dolffin trwyn potel ym mae Ceredigion ac yn gweithio ar gynllun peilot i grynhoi gwybodaeth bioamrywiaeth ar gyfer gweithgaredd hamdden a thwristiaeth, addysg ac arallgyfeirio amaethyddol.

Mae'n gyfnod cyffrous ym maes rhannu gwybodaeth fywydegol, wrth i'r hedyn o syniad a blannwyd dros ddegawd ddechrau egino.

Mibora minima, February 2007, illustrating habitat and associated species (note rabbit dropping for scale)

Early sand grass

a miniature miracle

Photos: K. Rawlins

Aberffraw

The most modest of plants can become an old friend in the right circumstances, although you need a good nose to start with.
KAREN RAWLINS *encounters a rare and exquisite little sand dune inhabitant, and proves the point.*

Early sand grass, February 2006 (next to dead Marram leaf for scale

I clearly remember the day I first saw early sand grass on the dunes at Aberffraw. I knew it was there, theoretically, but had rather assumed that it was so rare and tiny that I'd never see it unless I made a studied effort, something which I had never found time for, and possibly never would. It was February, and very cold, but nevertheless we were doing our duty by the dogs and taking them for their regular walk across the dunes to the beach. We were wrapped up warm but hadn't expected rain, so when an alarmingly black front of cloud loomed over the horizon promising an imminent downpour, we ran for cover in the lee of the largest nearby dune and hunkered down to wait for it to pass. And that's when I saw it. It turned out I was lying next to it and it was quite literally next to my nose. It caught my attention simply because it was so small in comparison with the relatively massive plashes of the raindrops leaving craters around it. But it was growing in almost bare sand, so it wasn't really difficult to see, and once I'd looked around, I could see that there was quite a bit of it on the edges of the blown-out sand of the dune.

It is reputed to be the smallest grass in the world (Rich 1997) and is recorded as native from only 15 National Grid hectads in the UK (Preston et al. 2002), making it nationally rare - the recorded locations

being Anglesey, the Gower, the Channel Isles and the Sefton Coast. Belonging to the Poaceae family, it is a compact tufted annual grass with narrow (approx 0.5mm), hairless, slightly inrolled leaves which can have a purplish tinge, and spikes of flowers which are largely one-sided and red-purple-green in colour, and typically up to 2cm high. (Although Stace states 8-12cm, and Hubbard 2-15cm, I've never seen it any taller that about 2cm at Aberffraw. There is variation in its morphology, though, particularly in the length of the flower stalk at more southern locations).

It is quite easy to identify, particularly early in the year, because of its early flowering season (February to May) and its diminutive size. You can't really see it until you are kneeling, and there are not many other small grasses that flower so early to confuse it with. It requires very open, sparsely vegetated habitat with plenty of bare, but not mobile, sand in which to set seed. It has very inefficient seed dispersal, and cannot compete with perennial species in the wetter slacks or the more consolidated fixed dunes. It is most successful in dry open dunes because it is highly resistant to soil moisture stress. It's a pioneer of a pretty hostile habitat when you consider it - bare sand is very nutrient-poor, exposed and extremely free-draining, and not many species are able to adapt to these conditions. The benefits for *Mibora* are the lack of competition from other plants unable to cope with the difficult conditions and the ample colonisation opportunities.

If you want to see early sand grass at Aberffraw, you should look for it in areas closely grazed or excavated by rabbits, the trampled areas along the edges of

footpaths or the margins of fixed dune blow-outs.

Since that first chance occasion, I now see *Mibora* at Aberffraw every year, without fail. Of course, now I actually look for it, and when I find that wonderful miniature miracle, it is like seeing an old friend again. I always take it as a hopeful sign that winter is almost over, and glorious spring is on its way. I'm looking forward to seeing it again soon!

Karen Rawlins has worked for CCW in Bangor since she graduated from Lancaster University in 1991 with a degree in Ecology. She has lifelong links with Anglesey and lives near Aberffraw with her husband and two dogs.

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The making of a meadow

Restoring a meadow at Gilfach Farm

Jonathan Stone

The meadow, September 2006

So many hay meadows, a glorious habitat full of life and colour, have been lost, that conservation organizations are now turning their attention to establishing replacements for some of those that have gone. An early example of such a project has yielded a mass of data and all kinds of interesting results, as ***JULIAN JONES*** *and* ***JONATHAN STONE*** *explain.*

Restoring or creating a habitat on a nature reserve is a simple enough procedure isn't it? Whether upland or lowland, coastal sand dune or inland flood-plain, there is a wealth of restoration handbooks waiting to help you. This was not the case in 1991 when the Radnorshire Wildlife Trust (RWT) set about turning an agriculturally improved pasture into a wildflower meadow.

The less than romantically named 'compartment 9a' was only a small part of the 383 acre farm that RWT purchased in 1988 (see map 1). Situated next to the road which passes through the Marteg valley, it is a relatively level field with a free-draining soil. It had been easy to plough up and re-seed with rye grass and white clover but, equally, it lent itself to restoration. It was also a case of seizing an opportunity, when it arises, to enhance biodiversity.

In July 1991 the National Coal Board, in conjunction with the Countryside Council for Wales (CCW), decided that their seed harvester could be used

Stuart Smith

Great burnet

Stuart Smith

Knapweed *Centaurea nigra*

to harvest seed from meadows in the Elan Valley to re-seed road banks there. This was the spur for RWT to discuss the idea of harvesting seed from Cae Coed-Gleision SSSI.

This is a species-rich hay meadow found close to the Gilfach Nature Reserve in the parish of St Harmon. At 2.8ha it is several times the size of the proposed receptor site, but both donor and receptor sites have a south-facing aspect and similar altitude (just under 300 metres). It would be a fair assumption that, prior to agricultural improvement, the field at Gilfach had similar vegetation. Dominated by common bent, like many MG5 black knapweed/crested dogstail grasslands, Cae Coed-Gleision also has an area of wet flush to add to its overall diversity, and clumps of the nationally scarce wood bitter-vetch at its margins.

Unfortunately the 1992 hay meadow restoration of compartment 9a was not monitored closely, so it is uncertain which species were present in the mixture from Cae Coed-Gleision SSSI, and which ones became established within the sward (see Chambers, 1999). The base-line survey of compartment 9a carried out by Steve Chambers in 1997 and 1998 found species uncharacteristic of 'old meadow', such as changing forget-me-not and squirrel-tail fescue.

Map 1

A pattern of change

Annual surveys from 2001 to the present reveal a much more complex picture about how different species find a niche within a hay meadow following a restoration project. Over 40 species were recorded in the baseline surveys of 1997/98. Some of these species, such as yarrow, have come and gone. It is also likely that species may have established after seeding with the meadow mix in 1992 and then vanished by 1999. However, since annual surveys began in 2001, new species have appeared in the sward every year. So, although we don't know exactly which species were introduced, the dynamic nature of a developing hay meadow still makes our botanical surveillance valid and exciting.

Stuart Smith

Wood bitter-vetch

The first great burnet and black knapweed plants appeared in 2001 and have remained in the sward, although missed in some years (Robertson and Jones, 2003). Given the dominance of this species at Cae Coed-Gleision SSSI, it seems remarkable that it took ten years to establish. Several flowering spikes of common-spotted orchid appeared in 2007 and it was a first record for Gilfach as a whole, so perhaps we shouldn't be too concerned with the original donor site and just sit back and watch how a hay meadow habitat evolves.

James Blair

April 2003

The stated desire to have the same surveyor following the same route has not always been possible (Chambers, 1999). The very hot summer of 2006 burnt up the sward to such an extent that by the time the day of survey arrived (20th July 2006), many plants were unrecognisable and the field was a mass of burned, yellowing leaves and parched earth. The hot, dry summers of 1995 and 1996 were also highlighted by Steve Chambers as a reason for certain annual species dominating the sward.

When is a hay meadow not a hay meadow?

In comparing the composition and relative abundance of species between the donor and receptor sites, significant differences can be seen. Key species such as great burnet and black knapweed are still barely present in the Gilfach field, yet are key components of the donor meadow. Conversely, the eyebright, lesser hop-trefoil and rough hawkbit have shared dominance of the sward throughout the study, but are, at most, locally frequent within Cae Coed Gleision SSSI.

The golden yellow haze of rough hawkbit is truly something to behold. Tourists will stop their cars whilst travelling along the Marteg valley to view the scene and take photographs of a 'classic hay meadow'. Of course this is not the case! The artificial nature of the sward was soon noticed by the Gilfach grazier who would not use the hay when it was cut in 2000 and 2001.

It was the original intention of the project to create a hay meadow at Gilfach which could be used as a donor for seeding improved fields on the nature reserve and beyond. Continuing with that aim, the management plan prescribed aftermath grazing with up to five sheep from 1st September to 31st December each year, and cutting once a year after 1st July.

After lengthy debate within RWT, and in liaison with CCW scientific staff, it was decided to manage compartment 9a as if it were a hay meadow – shutting it off from livestock at least 8 weeks prior to a hay cut – but at the end of July to graze it with cattle instead of being cut for hay. This began in 2003 and has continued to the present.

The lack of an annual hay cut appears to have benefited some species and caused a decline in others. Yellow rattle has declined since 2003, probably as a direct result of the change in management. As a consequence, some of the grass species have increased, in particular common bent and Yorkshire fog, although the data for the latter have been very variable and in 2001 its abundance was not recorded.

Compartment 9a in 2042

So how will the field look in 2042, 50 years on from its creation? Perhaps a more interesting question would be to ask how it will develop. At least, by carrying out annual surveys we will be able to watch the changes unfold.

One concern has been finding a consistent approach to the surveillance of the site. As stated earlier, there is a problem in having only one surveyor carrying out the work year on year; volunteers and staff members move on and some botanists confess to having a 'blind spot' over certain plant species. Varying the surveyors may reduce consistency of approach, but it might produce a more comprehensive species list over time. This was borne out by a group from Brecknock Wildlife Trust who visited in June 2007. Split into four different groups, they all spotted differences in species and their relative abundance as well as finding the first ever record for common spotted orchid at Gilfach.

Whether RWT's aim of having a population of greater

Jonathan Stone

butterfly orchid is achieved by 2042 remains to be seen. We have been considering whether introductions of species or further strewings of hay taken from Cae Coed Gleision SSSI should occur to speed up the development of a species-rich hay meadow.

No doubt RWT would adopt a slightly different approach if we tried meadow creation on Gilfach again or at another nature reserve. Whatever technique you use, our advice to others would be to get on with it and have fun seeing what comes up; you may be in for a few surprises!

Julian Jones has worked for the Wildlife Trusts since 1997, spending most of this time with Radnorshire Wildlife Trust, and has a particular love of hay meadows since working as 'Fritillary Warden' at North Meadow NNR, Wiltshire between 1995 and 1996. Jonathan Stone has been Reserves Officer for Radnorshire Wildlife Trust since 2004.

Acknowledgments: Thanks are due to the CCW partnership programme which has helped fund the surveillance of the meadow.

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Gaynor Ainscough

Her a hwyl wrth adfer gweirglodd

Nôl yn 1992, mentrodd Cymdeithas Bywyd Gwyllt Maesyfed ar arbrawf i adfer gweirglodd mewn cae bychan ar dir fferm Gilfach, yng nghwm Marteg. Defnyddiwyd hadau o SoDdGA Cae Coed Gleision, yng nghwm Elan; er y gwahaniaeth maint rhwng y ddau safle roedden nhw'n debyg o ran wyneb wedd ac uchder y tir. Cherwydd anawsterau monitro, anodd yw gwybod pa blanhigion oedd yn bresennol cyn ac ar ôl yr ail-hadu. Ond ers 2001, mae arolygon blynyddol wedi rhoi darlun diddorol a chymhleth o esblygiad gweirglodd 'newydd'. Amheuaeth o hyd yw'r ddau gae; er mor drechol, er enghraifft, yw'r bengaled yng Nghae Coed Gleision, mae'n flodyn prin ar gae Gilfach. Mae carped melyn y peraidd garw ar dir Gilfach yn creu argraff o weirglodd draddodiadol - er na allai ffermwr lleol ddefnyddio'r cnwd yn 2000 a 2001! Y bwriad gwreiddiol oedd creu gweirglodd i fod yn ffynhonnell o hadau ar gyfer gwaith adfer cynefin pellach. I ateb hyn, rheolwyd y safle ers 2003 fel gweirglodd, er mai pori'r cnwd gyda gwartheg yn hytrach nai dorri sy'n digwydd. Mae hyn eto, wrth gwrs, wedi newid cydbwysedd y llystyfiant. Sut olwg fydd ar y cae bach hwn mewn hanner canrif? A gyflawnir y nod o weld tegeirian llydanwyrdd yn tyfu erbyn 2042! Tybed. Ond fe fydd yn hwyl gwylio.

Cymru a'r byd

TEYRNGED I MERFYN

Yn y flwyddyn newydd, cawsom y newyddion am farwolaeth Merfyn Williams, un o hoelion wyth y mudiad amgylcheddol yng Nghymru. Bu farw Merfyn o drawiad ar y galon yn ei gartref yn 58 oed. Trasiedi i'w wraig Shirley a'i ddau fab, ac ergyd i bawb oedd yn ei nabod.

Mae ei farwolaeth yn golled i ni gyd yng Ngymru, ond yn arbennig i fywyd cymdeithasol a diwylliannol Meirionnydd lle roedd Merfyn yn rhoi ei amser mor rhwydd. Fe wyddai am werth gweithio ar lwyfan cenedlaethol ond hefyd pwysigrwydd ymrwymiad i'w gymuned.

Roedd o'n dod ag ynni a brwdfrydedd i bob ymgyrch ac yn ysbrydoli pawb oedd yn gweithio efo fo. Roedd ei ddefnydd rhwydd o ymadrodddion a rhigymau Cymreig yn goleuo ei eiriau ar lafar ac ar bapur: mewn sector lle mae'r iaith Saesneg yn arferol, roedd ei benderfyniad fod yr iaith Gymraeg yn cael ei defnyddio a'i pharchu yn esiampl i eraill.

Roedd Merfyn hefyd yn medru pontio'r byd academaidd, gwleidyddiaeth, cymdeithas sifil a'r cyfryngau yn well na'r rhan fwyaf ohonom ni. Fe'i gyflogwyd gan Barc Cenedlaethol Eryri yng Nghanolfan Addysg Plas Tan y Bwlch cyn dod yn ddarlithydd yn yr hen Goleg Normal Bangor (erbyn hyn yn rhan o'r Brifysgol): fe gafodd cenhedlaeth o fyfyrwyr Cymraeg eu hysbrydoli gan ei gyfuniad o archaeoleg, diwylliant a thirwedd. Am ddeng mlynedd wedyn bu'n Gyfarwyddwr ar Ymgyrch Diogelu Cymru Wledig a bu'n wrthwynebydd lleisiol o ffermydd gwynt, ond hefyd yn hyrwyddwr o gymeriad ein cymunedau gwledig yng ngwyneb globaleiddio.
Fasa gan Merfyn syniad wahanol o ystyr "Natur Cymru". Yn hytrach na'r byd natur sydd arwahân i ddynoliaeth, gweld be sydd "yn ein natur" fel Cymry oedd Merfyn; cymeriad nodweddiadol a digyfnewid y genedl sy'n cael ei lunio trwy rhyngweithiad a'n hamgylchedd.

Eironi stori ei fywyd (yr oedd yn fodlon iawn cydnabod) oedd iddo gael ei eni i gymuned bywiog a'i crëwyd gan chwareli llechi o oes gynt, ond wedyn yn ymgyrchu yn erbyn diwydiannau cefn gwlad heddiw. Roedd yn derbyn ac yn dathlu etifeddiaeth na fedrai newid, ac yn ddiau, ysgrifennodd lyfrau a phamffledi safonol ar gymunedau'r chwareli. Ond doedd o ddim yn gallu dygymod a'r newidiadau oedd yn digwydd yn ei oes ei hunain.

Roedd o'n gyndyn i dderbyn y consensws cynyddol ar newid yr hinsawdd, ac yn gweld ffermydd gwynt fel ymyrraeth yn y tirlun oedd yn cael eu hyrwyddo gan ddiddordebau estron. I'r rhai oedd yn arwain yr ymgyrch yn erbyn newid yr hinsawdd, roedd o'n adweithiwr, ond roedd o'n hapus i aros tu allan be oedd o'n ystyried fel cylchoedd amgylcheddol ffasiynol. Iddo fo, roedd y persbectif traddodiadol yn bwysicaf, a'i wreiddiau mewn gwerthoedd cymunedol. Yn ddiweddar, mi ddaru gydnabod bygythiad cynhesu byd-eang, ond annog ymateb trawsnewidiol oedd Merfyn yn hytrach na dibyniaeth ar dechnoleg. Yn hyn o beth, doedd o ddim ar ben ei hun.

Roedd yna dân yn ei fol, yn arbennig tuag at Gymru, ei thirwedd a'i phobl. 'Roedd o'n gyfathrebwr da, dim ots pwy oedd ei gynulleidfa, ac yn gallu creu darlun byw wrth ddisgrifio'i bwnc a chadw diddordeb pobl o'r dechrau i'r diwedd. Dyma un rheswm iddo gael ei wahodd i fod yn Gadeirydd ac i eistedd ar sawl pwyllgor. Doedd ganddo ddim ofn chwaith deud beth oedd o'n feddwl. Roedd o'n mwynhau tynnu coes, cael hwyl a sgwrs, a roedd o'n gwmni difyr.

Bu Merfyn yn un o aelodau cyntaf Cyngor Cefn Gwlad Cymru a bu ar Fwrdd Cyngor Gweithredu Gwirfoddol Cymru. Fel Cadeirydd Cyswllt Amgylchedd Cymru, hyrwyddodd ystod eang o farn a diddordebau heb or-wthio'r hyn yr oedd o'n credu'n gryf ynddo. Wedi treulio cyfnod yn y swydd, gwrthodwyd ei gais i sefyll i lawr, gymaint oedd ei boblogrwydd.
Fe'i benodwyd yn Gyfarwyddwr Gweithredol cyntaf Cynnal Cymru gan ei fod yn medru ynganu'r weledigaeth ehangach o gynaladwyedd yn cynnwys safbwyntiau diwylliannol, esthetig ac ieithyddol sydd ar goll mewn cymaint o drafodaethau. Ef oedd y cyntaf i ddefnyddio'r term 'Cynnal Cymru' gan egluro arwyddocâd 'Cynnal' ac yn herio ni i ddilyn ei ystyr a chynnal, cynorthwyo, magu ac arwain.

Morgan Parry, Cadeirydd, Cynnal Cymru a Phennaeth, WWF Cymru

Wales and the world

Merfyn Williams

Cynnal Cymru

MERFYN WILLIAMS

Early in the new year we learned of the death of Merfyn Williams, one of the key figures in the environmental movement in Wales. Merfyn died of a heart attack at his home, aged 58. A tragedy for his wife Shirley and three sons, and a shock to everyone who knew him.

His death is a great loss to all of us in Wales, but especially to the social and cultural life of Meirionnydd to which Merfyn gave his time so freely. He knew the value of working on the national stage, but also the importance of commitment to his local community.

The energy and passion he brought to every campaign was an inspiration to those he worked with. His effortless use of Welsh metaphor and rhyme illuminated his written and spoken words and in a predominantly English speaking sector, his insistence that the Welsh language should be used and respected was an example to others.

Merfyn was also able to bridge the divide between academia, politics, civil society and the media better than most. He was employed by the Snowdonia National Park Authority at Plas Tan y Bwlch Study Centre, before taking up a lecturing post in the old Bangor Normal College: a generation of Welsh students were inspired by his synthesis of archaeology, culture and landscape. For the next ten years he was Director of the Campaign for the Protection of Rural Wales and was a vocal opponent of wind farms, but also an advocate for rural distinctiveness in an era of globalisation.

Merfyn would have had a different take on the words "Natur Cymru". Rather than the nature that exists around us in our environment, he would have seen what is 'in our nature' as a nation, the distinctive and unchanging characteristics of Welshness which are shaped by interaction with our environment.

The irony of his life story (which he readily acknowledged) was being born into the vibrant community created by the slate quarries of an earlier age, but then campaigning against the industrialisation of the countryside today. He accepted and celebrated the legacy of a past he couldn't change, and indeed wrote definitive books and pamphlets on the slate quarrying communities; but was never reconciled to the industrial revolution taking place in his own lifetime.

He was slow to accept the growing consensus on climate change, and saw windfarms as an unnecesary intrusion into the landscape promoted by remote business interests. Those in the vanguard of climate campaigning saw him as a reactionary force, but he was happy to remain outside what he regarded as the fashionable environmental circles. He preferred instead an older perspective, more rooted in social values. In later years he recognised the growing threat from global warming, but urged a transformational response, rather than one reliant on big technological fixes, and in that he was not alone.

He was a fine communicator to any audience, able to lift the mood of any gathering with his mischievous humour, and this was one reason why he was asked to chair meetings and serve on committees. He was a founder member of the Countryside Council for Wales, and served on the Wales Council for Voluntary Action. As Chair of Wales Environment Link, he championed a broad range of opinions and interests without imposing his own strongly held beliefs. After serving his period of office, Council members refused to accept his request to stand down, such was his popularity.

He was appointed Executive Director of Cynnal Cymru because he could articulate that wider vision of sustainability, encompassing cultural, traditional, aesthetic and linguistic perspectives that are missing from so many debates. He was the first to use name "Cynnal Cymru", explaining the powerful significance of "Cynnal" and challenging us to follow its meaning and sustain, support, nurture and lead.

Morgan Parry, Chair of Cynnal Cymru and Head of WWF Cymru

Nature in reserve

Reuniting fens and restoring wood pasture

Last summer we reported that the **North Wales Wildlife Trust** was trying to buy a vital 43 acre piece of land to extend its fabulous Cors Goch National Nature Reserve and bridge the gap between two great Anglesey fens, Cors Goch and neighbouring Cors Erddreiniog.

The Trust needed to raise £260,000 by July, and set up the 'Fens Reunited' appeal for this daunting amount. The response was tremendous. With generous grants, a legacy and donations of £40,000 from members and the public, the Trust has been able to go ahead and purchase the land.

To make the most of this acquisition, the Trust is working on ambitious plans to improve the existing wildlife habitats, developing pockets of fen and hazel woodland, thickening up hedgerows and encouraging the wildlife of the area, such as orchids, barn owls, bullfinches, bats, and hares. The land also provides a completely new access to the nature reserve. Visitors will be able to enjoy a panoramic view over the reserve from a viewing point near the new access.

The Trust is still fundraising for the management of the land. You can make a donation, or find out more about the Trust's plans by visiting the website: **www.wildlifetrust.org.uk/northwales**

At the same time **Gwent Wildlife Trust** embarked on a similarly ambitious plan to purchase a large block of farmland on the Trellech plateau near Monmouth. The land, which is adjacent to the Trust's existing Pentwyn Farm reserve, occupies an area which remained open, grazed forest full of clearings until a little over a century ago. This area, known as Wyeswood Common, has many of the characteristics of a medieval landscape, with wildwood intimately mixed with open areas and wood pasture.

The Trust's dream was to replace the heavily fertilised, tightly grazed fields of a dairy farm with a continuous mosaic of woods, hedges and clearings reminiscent of this ancient landscape of lightly grazed wood pasture. This is what gave the appeal its name: 'Wyeswood Common - Back to the Future'.

The task of turning 104 acres of wildlife-poor farmland into wood pasture filled with wildlife comes with a heavy price ticket. The Trust needed to raise £550,000. Incredibly, it has reached the point where it has the funds to buy the land, and has done so. The challenge now is to raise £98,000 for a major restoration programme over the next three years. If you want to help or find out more, visit **www.gwentwildlife.org**

An article about the latest chapter in the remarkable story of Wyeswood Common will appear in the summer edition of this magazine.

JAMES ROBERTSON

NWWT

Cors Goch outlined in red and the new land in yellow

Green **Bookshelf** • **Silff Lyfrau** Amgylcheddol

LLYFR NATUR IOLO
Addasiad Iolo Williams
Gwasg Carreg Gwalch 2007
£14.50
clawr meddal

Addaswyd y llyfr hwn o lyfr Saeseng gwreiddiol Paul Sterry. Yn ôl y clawr, dyma 'Lawlyfr ffotograffig am fywyd gwyllt Cymru – yr holl rywogaethau cyffredin a rhai prin'. Ac er fy amheuaeth na allai un llawlyfr wneud cyfiawnder â'r ystod anferth o fywyd gwyllt yng Nghymru, o wymon a mwsoglau hyd at loÿnnod byw, pysgod ac adar, rhaid cyfaddef bod y llyfr yn gwneud yr union beth a nodir ar y clawr! Mae'n Dardis o lyfr, cymaint yw'r wybodaeth sy'n gorwedd rhwng dau glawr.

Wedi'r cyflwyniad, a'r cyfeiriadau at gymdeithasau bywyd gwyllt sy'n weithgar yng Nghymru, ceir allwedd a disgrifiad byr ar gyfer pob un o'r 20 grŵp gwahanol o anifeiliaid, planhigion a ffyngau a ddewiswyd i'w cynnwys yn y llyfr.

Trin a thrafod cynefinoedd wna'r 32 dudalen nesaf. Neilltuir dwy dudalen i bob un o'r 15 cynefin morol a thirol, gan drafod llystyfiant, nodweddion, ac anifeiliaid allweddol. Yn ogystal â'r disgrifiad manwl awgrymir llefydd yng Nghymru lle gellir gweld enghreifftiau da o'r cynefinoedd hyn.

Dyma gychwyn wedyn ar brif ran y gwaith, sef 312 tudalen yn disgrifio ac yn darlunio'r rhywogaethau. Fformat cyfarwydd a ddefnyddiwyd, gyda grid o ffotograffau ar y dudalen dde a'r testun disgrifiadol ar y chwith. Er mai cryno yw'r disgrifiadau, llwyddir i gynnwys gwybodaeth ddefnyddiol sy'n helpu'r darllennydd i adnabod y rhywogaeth, yn cynnwys ymddygiad, cynefin, nodweddion adnabod pwysig, misoedd blodeuo/hedfan a dosbarthiad.

Ar y cyfan, mae'r lluniau o safon uchel ac yn rhoi argraff dda o'r rhywogaeth. Nid ydynt, wrth reswm, yn llwyddo bob tro i arddangos yr holl nodweddion pwysig sy'n hanfodol ar gyfer adnabod rhywogaeth. Mae'r mynegai Cymraeg a Saesneg yng nghefn y llyfr yn gynhwysfawr ac yn hawdd i'w ddefnyddio

Dyma lyfr sy'n taro'r marc yn bendant yn fy marn i. Dewiswyd llyfr arddercho sydd eisoes yn llwyddiannus yn y Saesneg. Mae'r addasiad yn sicrhau ei bod yn hawdd i'r darllenydd ddarganfod yn y sydyn pa bynnag rywogaeth y dônt ar ei thraws. Mae'r awduron wedi defnyddio enwau safonol Cymdeithas Edward Llwyd lle bo'r rheiny ar gael ac wedi dewis o ffynonellau eraill ar gyfer y gweddill. Mae'r enwau Lladin a Saesneg hefyd wedi eu cynnwys. Mae'r testun yn gryno ac yn rhwydd i'w ddarllen ac mae ysgrifennu graenus Bethan Wyn Jones yn cyfrannu at safon uchel y cyhoeddiad.

Dyma lyfr a fydd yn apelio at y darllenydd lleyg ac at deuluoedd â phlant oherwydd ei fformat cyfeillgar a lluniau deniadol. Mae'n ddeniadol i rai sydd heb fod â silffoedd o lawlyfrau manwl ar wahanol agweddau o fyd natur ond sydd ag awydd i ddarganfod mwy am y bywyd gwyllt o'u cwmpas. Ond ar yr un pryd, dwi'n siwr y bydd sawl arbenigwr yn falch o'r gyfrol hon hefyd. Wedi'r cwbl nid pob botanegydd gwych sy'n gyfarwydd â physgod a chorynnod ac nid pob adarwr brwd sy'n hyddysg â choed a ffyngau.

Gan mai llyfr ar gyfer Prydain i gyd oedd y llyfr gwreiddiol, go brin y gwelwn ni rai o'r rhywogaethau yng nghefn gwlad Cymru! Ac mae'n amlwg nad yw pob un rhywogaeth yng Nghymru wedi ei chynnwys. Ond rhaid derbyn mai detholiad ac addasiad yw hwn, a hollti blew fyddai mynd ati i nodi pa rywogaethau ddylai fod wedi cael eu cynnwys a pha rai ddylai fod wedi cael eu hepgor.Ar y cyfan mae'r dewis a'r amrywiaeth o rywogaethau yn gynhwysfawr a phriodol ar gyfer y math yma o lyfr.

Pwy bynnag fo'r gynulleidfa dwi'n siŵr y bydd y llyfr apelgar a defnyddiol yma yn ymddangos ar nifer fawr o silffoedd llyfrau ar draws Cymru.

Rhys Jones

TRO DRWY'R TYMHORAU
Twm Elias
Gwasg Carreg Gwalch 2007
£8.50
clawr meddal

Fel y dywed ar y clawr cefn, "Mae'r gyfrol hon yn olrhain y flwyddyn o fis i fis ac yn disgrifio'r dathliadau o dymor i dymor - a hynny yn arddull hamddenol a gogleisiol Twm Elias ei hun." Cyfrol a gasglwyd yn dilyn y sgyrsiau a wnaeth Twm Elias i'r rhaglen radio, 'Galwad Cynnar' ar Radio Cymru yw hon.

Mae diwyg y llyfr yn ddifyr ac wedi'i ysgrifennu mewn arddull syml, agos atoch a graenus. Mae yn y gyfrol

ddigon o hiwmor a sylwadau bachog hefyd. Mae'r gyfrol ar ffurf calendr o fis i fis ac yn hawdd troi ato bob mis i ddarllen am y coelion a'r arferion a fodolai ers talwm. Braf yw gweld dyfyniadau o hen rigymau, fel 'Modryb Elin Ennog' (diwrnod crempog) a 'Hei ha! Cadi Ha! (C'lanmai).

Dyma flas ar rywfaint o'r cynnwys sy'n ymddangos dan benawdau'r gwahanol fisoedd:-

Dydd Calan, mis Ionawr

"Blwyddyn newydd dda i chi, ac i bawb sydd yn y tŷ
Blwyddyn Newydd dda i chi, dyna yw'n dymuniad ni."

Dywed Twm Elias fod hel calennig yn hen arfer a fodolodd tan bum degau'r ganrif ddiwethaf a bod ei deulu ef wedi parhau a'r arferiad tan 2005.

Diwrnod Crempog, mis Chwefror

Noda'r awdur fod y dyddiad yma yn gallu symud o flwyddyn i flwyddyn, ond bob tro 40 diwrnod cyn y Pasg.

C'lanmai, mis Mai

Mae'r Ŵyl hon yn nodi diwedd tymor y Gaeaf a sonnir yma am bobl yn gwneud anferth o goelcerth fawr ac yn canu a dawnsio dros y fflamau. Roedd Mai 1af ei hun yn ddiwrnod o ddathlu gwirioneddol, gyda phartïon yn mynd o dŷ i dŷ i ganu a dawnsio ac yfed cwrw a gwledda.

Concyrs, mis Hydref

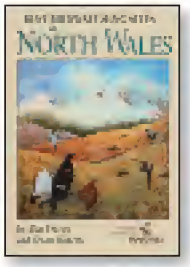
"Cnau ceffylau" yw'r enw arall a ddefnyddia Twm Elias i ddisgrifio'r rhyfeddodau hyn o fyd natur, sef y concyrs ac mae'n adrodd hanes ef a'i deulu yn mynd i Lanrwst o bob man i hel concyrs. Nodir ei siomedigaeth yn awr gan fod concyrs wedi'u gwahardd o'r ysgolion oherwydd rheolau iechyd a diogelwch "...Mae'r oes wedi newid, yn tydi?" meddai.

Y Pwdin Dolig, mis Rhagfyr

Yma nodir fod llai na 20% o deuluoedd yn gwneud eu pwdin Nadolig eu hunain, ond ers talwm dysgwn mai cyfnod traddodiadol i wneud y pwdin oedd mis Tachwedd, cyn dechrau ympryd yr Adfent a thraethir yr hanes am y traddodiad o roi arian yn y pwdin, arfer sydd yn dal yn bodoli hyd heddiw.

Llyfr gwerth ei gynnwys ar eich rhestr siopau, pe bai ond i ddarllen pwt bach bob dydd ac atgoffa eich hun o'ch gorffennol traddodiadol a chyfoethog.

Gwenllian Rowlinson



BEST BIRDWATCHING SITES IN NORTH WALES

Alan Davies and Owen Roberts
Buckingham Press 2007
£15.95 paperback

Alan Davies is well-known and liked in North Wales as the site manager for the RSPB Reserve at Conwy, or at least that was his job until he departed at the end of 2007 to see 4000 species in a year! His co-author Owen Roberts worked in Wales for some years.

This new book covers 58 major sites scattered from the Dee Estuary to Anglesey, Bardsey and Porthmadog. Each site has a full description, good access details, an excellent map and, of course, species lists for different seasons. A further eleven sites in the Wrexham area are described more briefly. One feature is a percentage figure for the probability of seeing the main target species: these may be realistic for Alan Davies, but could be a bit optimistic for the less assiduous. Helpful identification tips are included.

I can thoroughly recommend this guide for its stated purpose. It will provide details of new sites even for those who already know north Wales quite well. My only quibble is the relative absence of valley oakwood sites – the Aber Valley with its woodlands is included, but sites such as Coedydd Maentwrog and Padarn Country Park are not. Well inland, Lake Vyrnwy looks rather isolated! There is always scope for inclusion of additional sites in a new edition.

Geoff Gibbs

SILENT FIELDS

Roger Lovegrove
OUP 2007
£24.99

This book represents two firsts for me: it is the first book I have ever been asked to review; and it is not the sort of book I would usually buy and read. It was bought purely on the strength of the author's name. Roger Lovegrove OBE is former Director of the RSPB Wales, and the author of, or a contributor to, several excellent ornithological books.

Roger has to be commended for the amount of research that has gone into compiling this book, sub-titled 'The long decline of a nation's wildlife'. He has brought together data from historical documents of the 16th century to modern times, highlighting the persecution of some

of Britain's most stunning mammals and birds. Excellent monochrome illustrations by Ross Lovegrove accompany the text.

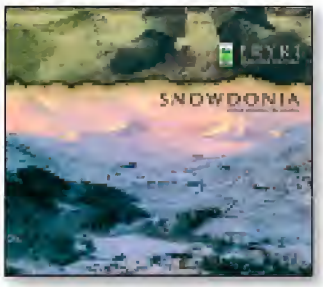
Split into sections dealing with individual species, and chapters dealing with persecution in the areas of England, Wales and Scotland, the Scottish chapter in particular brought home to me the scale of this persecution. One of my favourite birds, the hen harrier, has its own chapter. This bird has suffered more than most over the centuries, and is still to this day severely persecuted, very recently being in the news. The number killed in Scotland since records began beggars belief.

As for my own country, parish records illustrating vermin payments are few and far between, for various reasons: in the case of one Anglesey parish, records were allegedly eaten by a cow!

However some records do remain and a good account is given in a table relating to vermin killed on Penrhyn Estate, Bangor,in the years 1874-1902. Amongst them are 13 pine martens, 4849 weasels, 3116 stoats, 735 sparrowhawks, 16 peregrines and 228 merlins.

Silent Fields provides a detailed account of the persecution of the nation's wildlife over the centuries and is 'a must' read for any naturalist or ornithologist. If you get nothing else out of this book but the desire to see that these practices are stamped out for ever in Britain and beyond, then Roger's book has done its job.

Brian Iddon



SNOWDONIA: PARK UNDER PRESSURE

Rob Collister

The Snowdonia Society, 2007.

£11.99 softback

Recently, while guiding someone on Snowdon and looking down on the Cromlech Boulders below, I recalled how a member of the Park Society, had rung me up to say the then Caernarfonshire Highways Department was about to blow up a chunk of these iconic rocks. Within a short time of that call, hundreds of climbers, walkers and lovers of Snowdonia had gathered round the Boulders to protest. The road was subsequently widened on the side opposite the Boulders and a famous Park landmark was saved.

Such is the power of protest and this bilingual book is full of such stories, from Rio Tinto Zinc's proposal to mine gold from the Mawddach Estuary and power boating on Llyn Geirionydd to the lost battle over the CEGB's Cwm Dyli pipeline replacement. Rob Collister skilfully interweaves the story of the emerging Park Society and the Snowdonia National Park Authority and how both organisations, in their different ways, tackle the pressures faced by our dwindling wild places.

Beautifully illustrated, apart from the poor map at the beginning (spot the spelling mistake), the photos are by no means confined to the famous views found in every other coffee table and guide book on the Park. They include many unusual views of the remoter parts of the Park together with its wildlife, Park Society committee members, and characters past and present.

As a history of the Park Society, the detail is accurate and the style is refreshingly critical. Rob Collister relates how the Society "...has won a few skirmishes, even the odd battle, but seems to be losing the war." Of the Snowdon Mountain Railway he writes "...it is hard to see what can be done about the smell of coal and diesel round the summit, clouds of acrid sulphurous smoke still envelope walkers on the path from Llanberis and, on still days, poisonous smog will continue to hang over the café and car park at the bottom." But to balance this gloom he describes at length the huge amount of members' energy which is voluntarily spent improving the landscape of Snowdonia.

This extremely readable account of the Snowdonia Park and Society should be a welcome addition to the shelves of Countryside Management students, National Park lovers and historians of all National Park independent 'pressure groups'. Whilst the conclusion to the book is somewhat depressing, it is gratifyingly sincere and clearly written by someone with a deep love and intimate knowledge of Snowdonia.

Rod Gritten

Marine matters

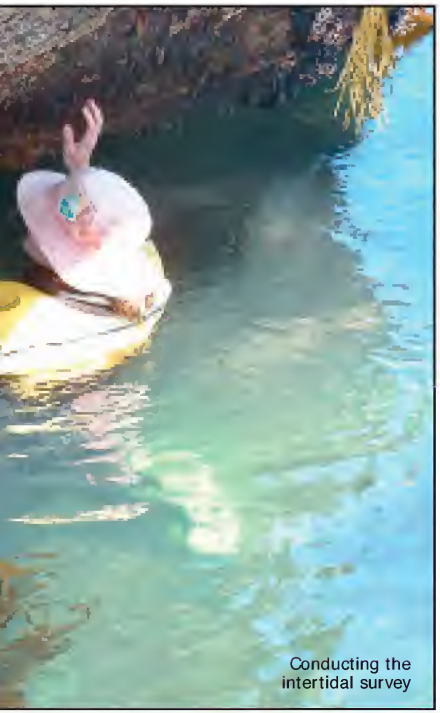
Cuttlefish 'bones' are among the common objects washed up on Welsh beaches. These buoyancy structures mostly come from *Sepia officinialis*, though slightly different shaped smaller 'bones' of other cephalopod species sometimes wash in. Looking a bit closer, a disproportionate number of the 'bones' can often be seen to have the front part broken off. The 'who done it' question arises if one surmises that a large predator might be taking the meaty part of the heads and tentacles but rejecting the indigestible 'bones'. Are there any observations or photographs of seals or dolphins preying on cuttlefish comparable to those of bottlenose dolphins, taken by Janet Baxter in Cardigan Bay, in which garfish, bass and salmonids can be clearly recognised?

Paul Brazier

Photo-identification has been used as a tool to study how faithful individual dolphins are to Cardigan Bay for over a decade, and latterly by applying 'mark recapture' mathematical models to estimate the total population, whether of quasi-resident or transient individuals. Photo-ID is showing promise as a tool for following the movements of grey seals between the haulouts well away from pupping beaches and the breeding areas. The complex patterns of light and dark pelage on the head can be matched using computer programs to assist orientations. Previously persistent wounds were the guide most often used. At Skomer this sometimes showed the same cow pupping on the same small part of a beach for several successive years. A photo-ID finding with several ramifications was made in the last few months by Sea Watch Foundation and others. They have been able to match photos of several dolphins using Liverpool Bay with ones also seen in Cardigan Bay. This finding is of significance bearing in mind the frequently quoted dolphin calf stranded in Cardigan Bay with higher levels of PCBs than any other cetacean analysed from round Britain. There were no obvious major sources of such pollutants in Cardigan Bay, but Liverpool Bay would have been a different matter. A question that follows is at what scale should the Habitats Directive be implemented for sub-populations of wide ranging megafauna?

One of the quirks of legal statutes in England and Wales was that stranded whales remained property of the Crown long after the monarch could conceivably have had any interest in dining off such things. This transmuted into a scheme where Coastguards notified the Natural History Museum, who had first call on anatomical research material and kept a record of the strandings. Wisely, when the Act was repealed, similar provisions were added to conservation legislation, maintaining long-term data sets. These provide very useful indirect evidence for the changing status of some cetaceans off our coasts, an example being striped dolphins, which were rarely found in the past but which have been more frequent in recent years. This fits with other examples of northward biogeographic shifts in marine species.

Stranded whales or dolphins often make the news, with the reporters and



Conducting the intertidal survey

the public asking for explanations. Growing out of the old strandings recording scheme and partly as a result of the finding of the PCB-contaminated dolphin calf, a scheme was put in place to gather bodies for post-mortems by experienced vets and for blubber samples to be analysed for a range of contaminants. In Wales, with a dedicated co-ordinator, this has been a great success, showing the rate of fishing gear entanglement, the frequent killing of porpoises by bottlenose dolphins, and the number of strandings of rare and difficult to identify species. Currently the whole scheme is in jeopardy in the financial fallout from mis-management of agricultural support and livestock disease issues.

IVOR REES

WHEN THE TIDE GOES OUT

For ten years a group of marine biologists from the Countryside Council for Wales has recorded and mapped the wildlife of the whole of the Welsh coastline. No other country has carried out a comparable survey; it is unique in providing consistent, comprehensive and coherent information about Wales' intertidal waters.

The team, fired by enthusiasm bordering on passion, managed to reach even the rockiest and least hospitable stretches of coast, and discovered an incredible array of marine organisms, some previously unknown from our shores.

The results have just been published by CCW. The report of the survey, *When the tide goes out*, will be of special interest to marine biologists here and elsewhere in Western Europe and perhaps further afield. Distribution maps show the location of species such as cushion star, eggshell razor and black footed limpet.

Well illustrated, with more than forty figures and many tables and photographs, the report includes information on the spread of introductions, the location of SSSIs and non-designated special features, and maps showing human use of the coast, such as 'man-made constructions'.

It should also appeal to policy-makers needing a good understanding of the nature of our coastline, the threats it is facing, and the location of mudflats, mussel and seagrass beds, *Sabellaria* reefs and so on.

For those of us who spent childhood holidays netting gobies in rockpools, and have graduated to a wider interest in the intertidal zone, this report will make for a challenging but worthwhile read.

For more information please contact Paul Brazier on **01248 385626** or **p.brazier@ccw.gov.uk**

JAMES ROBERTSON

Hysbysfwrdd / Noticeboard

If you would like your wildlife event to feature on these pages please contact Mandy Marsh on 01248 387373 or email info@naturcymru.org.uk (entries may be edited). Please mention Natur Cymru if you attend any of these events.

The National Trust

The National Trust is seeking a new Chairman for its Nature Conservation Advisory Panel. For further details about the role and how to apply please contact the Governance Team on **01793 817988** or visit **www.nationaltrust.org.uk/panelvacancy** The closing date for applications is 5pm on 18 April 2008. Interviews will be held in London on 15 May.

Wales Biodiversity Partnership

WALES BIODIVERSITY WEEK

7-15 Jun To find out what's happening near you visit phone **01656 726 984**. or visit **www.biodiversitywales.org.uk**

Cardiff University

TRAINING EVENTS
at Llysdinam Field Centre.
27 Mar *Introduction to Amphibians*
6 May *Introduction to Crayfish*
Contact Amy Tibble on **02920 879040** or **tibbleal@40cardiff.ac.uk**

Plas Tan y Bwlch

COURSES 2008
16-18 Apr *Phase 1 Habitat Survey*
6-8 May *Interpretive Master Planning*
7-9 May *Wildlife and Development - An Introduction for Engineers, Planners and Developers*
12-16 May *Introduction to the NVC.*
12-16 May *Tree Care for Amenity and Development*
9-13 Jun *Wildlife Surveying for Protected and BAP Species*
16-20 Jun *Grazing as a Management Tool for Nature Conservation*
30 Jun-4 Jul *Woodland Conservation*
Details: **www.plastanybwlch.com or phone 01766 590324**

School of Education & Lifelong Learning, Aberystwyth

COURSES 2008 - Starting dates:
28 Mar *Identifying the Lower Plants* Denmark Farm
31 Mar *Nature Reserves and Habitat Survey*, Denmark Farm
8 Apr *Introduction to Permaculture* Herefordshire
12 Apr *Woodland Birds* Aberystwyth
14 Apr *Breeding Birds of Coast and Estuary* Aberystwyth
19 May *Further Plant Identification* Cilgerran Wildlife Centre
28 May *Butterfly Survey* Cilgerran Wildlife Centre
10 Jun *Dragonflies* Aberystwyth
learning@aber.ac.uk 01970 621580

Fenn's, Whixhall & Bettisfield Mosses NNR

EVENTS
27 Apr *Birds of the Mosses walk*
11 May *Amphibian & reptile hunt*
8 Jun *Save the Mosses volunteer task*
15 Jun *Dragonfly Discovery* 1-4pm.
29 Jun *Haganella clathrata* – a chance to see the net-winged caddis fly, only found at 2 other UK locations. With Ian Wallace of Liverpool Museum. Full details: Caroline Evans (weekdays) **01743 282000** or Joan Daniels (weekends) **07974 784 799**, or e-mail **caroline.evans@naturalengland.org.uk**

North East Wales Wildlife

COURSES
27 Mar *Basic Amphibian Course*
29-30 Mar *Advanced Amphibians*
Dates to be confirmed:
April *Bird Summer Survey Training Lesser Silver Water Beetle ID & Survey Training*
May *Butterfly, Reptile and Dormouse Training Courses*
VOLUNTEERING Come and help NEWW with their work. **01352 742 115** or **weo@newwildlife.org.uk** or
3 Jun *Upland Ecology and Landscape Management: the Future*
14 Jun *Practicalities of Using Rainwater*
21 Jun *Plants of the Old Quarry*

Centre for Alternative Technology

COURSES
Please book early, **01654 705981**, **courses@cat.org.uk**, or see website.
26 Apr *Forest ecosystems.*
10 May *Birds of the Old Quarry*
24 May *Woodland Painting*
31 May *Charcoal Drawing*, also *Organic Vegetables of the Old Quarry*

Flora Locale

WILD PLANTS FOR LANDSCAPE AND BIODIVERSITY
Interested in designing, managing and restoring wild plants in the landscape? This year's events are 'in the flesh' - the best way to learn about what works, & what can go wrong. Call **01488 680457**, or see **www.floralocale.org**

Over the rainbow

SPRING BIRD BREAK
2-5 May *Birdwatching at Cardigan Bay* with ornithologist Den Vaughan. £345 inc. accommodation, meals, guide & transport. **01239 811155, info@overtherainbowwales.co.uk**

Bangor Bird Group

EVENTS
24 May *North Wales Summer Big Day*
31 May *Summer Bird Race*
Gareth Howells **01248 714 678**, Richard Birch **07958 397 476** or Sophie Griffiths **s.griffiths88@hotmail.co.uk**

Butterfly Conservation

MOTHS COUNT
Courses are free but must be booked in advance: **01929 406009** or **nmrs@butterfly-conservation.org www.mothscount.org**
26 Apr *Introduction to moths and moth recording* 7.30-11pm, Knighton.
7 Jun *National Moth Night and Day.* **www.nationalmothnight.info**
14 Jun *Moth recording workshop,* Llandrindod Wells.
15 Jun *Introduction to moth recording,* Loggerheads Country Park, Mold.
21 Jun-6 Jul *Garden Moths Count.*
Courses in Welsh:
1 Mehefin a 26 Gorff *Cyflwyniad i wyfynod a chofnodi gwyfynod.* 10.30-4pm, Canolfan Amgylcheddol Moelyci, Tregarth, Bangor.

Diolch am y lluniau i / For illustrations, thanks to:
Julie Horner, Mandy Marsh, Natural England, Alastair Robertson.

Back issues of *Natur Cymru* (Nos 2 - 25) are available priced £3.00

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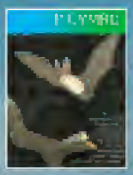

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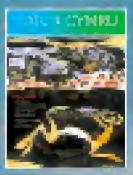

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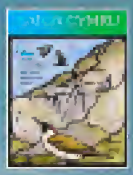

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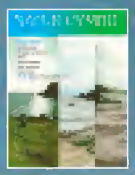

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Number Rhif 25

Spring storm clouds, Bethesda: Mel Parry Photo Library

Speckled wood butterfly

Shane Farrell

NATUR CYMRU SPRING/GWANWYN 2008

www.naturcymru.org.uk
www.natureofwales.org.uk

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